(No Model.)

R. ATHERTON.

INDICATOR FOR WINDING, WARPING, AND BEAMING MACHINES.

No. 602,251. Patented Apr. 12, 1898.

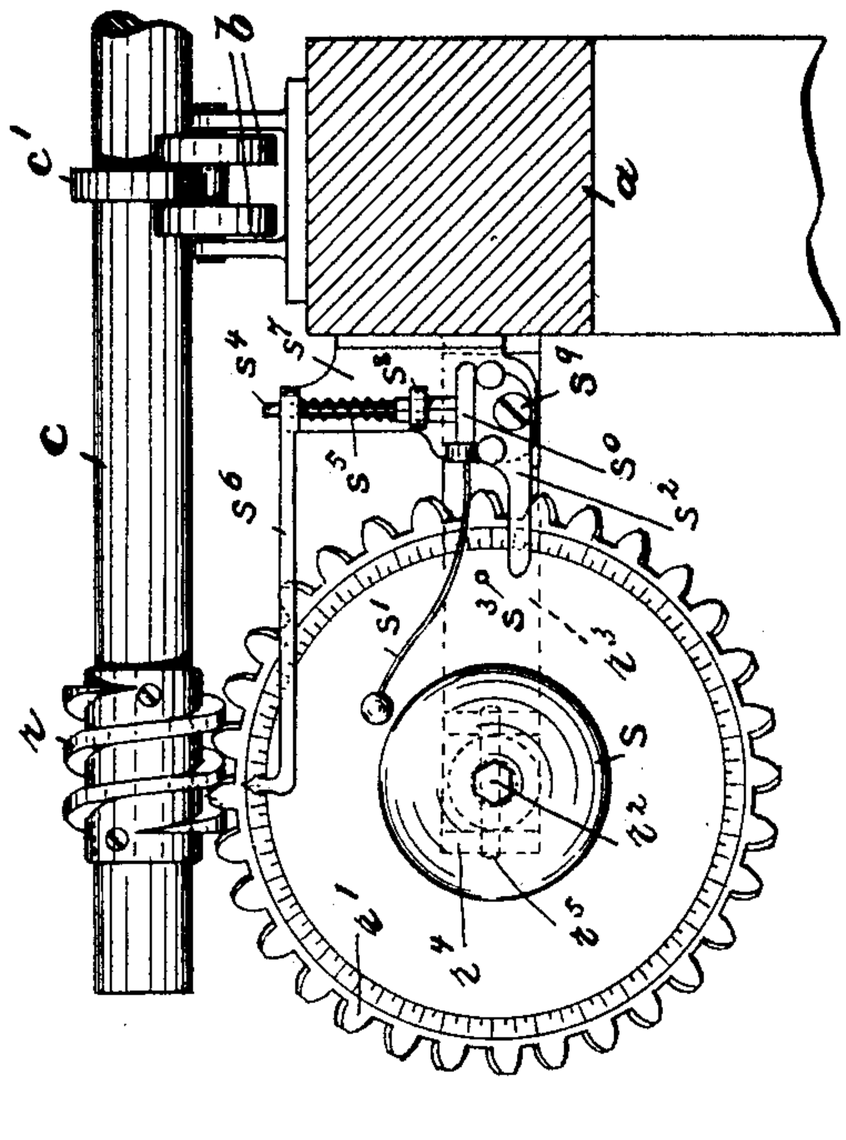

Fig. 1.

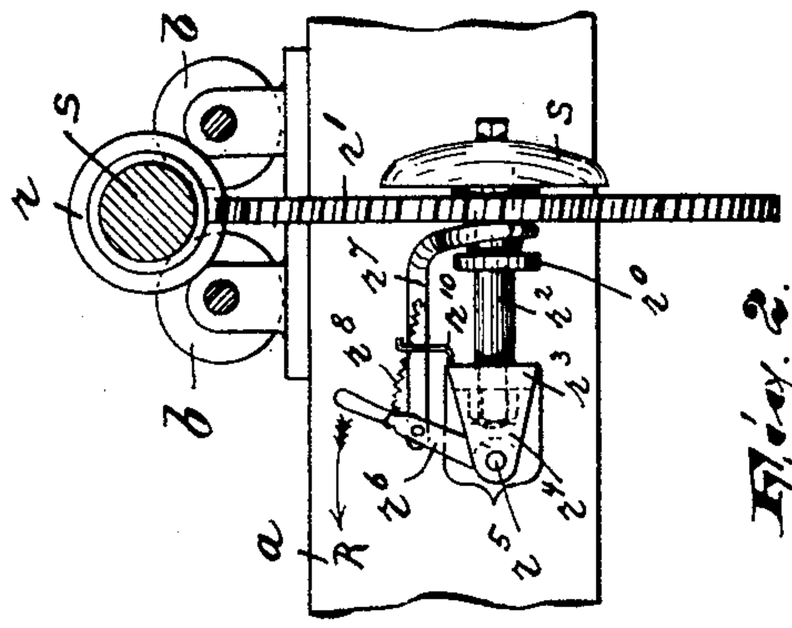

Fig. 2.

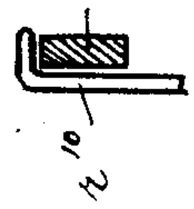

Fig. 3.

WITNESSES:

Wm. D. Bell.

Lowier Snyder.

INVENTOR:

Robert Atherton

BY Gartner & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT ATHERTON, OF PATERSON, NEW JERSEY.

INDICATOR FOR WINDING, WARPING, AND BEAMING MACHINES.

SPECIFICATION forming part of Letters Patent No. 602,251, dated April 12, 1898.

Application filed November 30, 1897. Serial No. 660,198. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ATHERTON, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Indicators for Winding, Warping, and Beaming 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a combined indicator and alarm for winding, warping, and beaming machines of simple and durable construction and easily and readily thrown into and out of engagement with its operating means, whereby the operation of the indicator and alarm can be arrested without the necessity of stopping the said operating means.

The invention consists in the combined alarm and indicator and its slidingly-arranged graduated gear-wheel, and in the combination and arrangement of the various parts, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

In the accompanying drawings, Figure 1 is a front elevation of my combined alarm and indicator illustrated in connection with a portion of a warper-frame and its reel-shaft; Fig. 2, an end elevation of Fig. 1, and Fig. 3 an enlarged detail view of the shifting-lever-retaining means.

In said drawings, a represents a portion of a warper-frame, and b b roller-bearings, suitably carried by said frame and supporting the reel-carrying shaft c, which latter is provided with a collar c', engaging between adjoining rollers b to thus prevent the lateral movement of said shaft.

On the frame a is secured in any desired manner a bracket s^7, provided with suitable guides for the vertically-arranged rod or spindle s^4, controlled by a spiral spring s^5, and prevented from rotation by having its lower polygonal-shaped portion guided in a correspondingly-shaped hole or opening in the lug s^8. At the lower end of said rod or spindle s^4 is mounted a shoe s^0, carrying the gong-hammer s' and normally resting upon the lever s^2, fulcrumed, as at s^9, to the bracket s^7, and which lever is provided with an arm or projection adapted to be engaged by the pin s^3 in a manner hereinafter described. To the frame a is also secured a bracket r^3, substantially parallel with the reel-shaft c and carrying at or near its free end a stub-shaft r^2, on which is revolubly and slidingly arranged a gear-wheel r', adapted when in normal position to mesh with the worm r on the reel-shaft c and to be operated thereby. On the said gear-wheel r', which is provided with suitable graduation-marks, is secured the pin s^3, heretofore mentioned; but it will be manifest that a series of pins could be arranged on said gear-wheels at specified intervals, in which case the gong-hammer can be operated more frequently to correspond to shorter lengths of material to be wound on or off the winding-machine. To the free end of the stub-shaft r^2 is secured the gong s, adapted to be operated by the gong-hammer s', as will be manifest.

To projecting lugs r^4 on the front portion of the bracket r^3 is secured a pin or axle r^5 at right angles to the stub-shaft r^2 and serving as a fulcrum for the lever r^6, which latter is provided with a suitable handle and is pivotally connected about midway to the outer end of the arm or link r^7, the inner portion of which is downwardly curved and fork-shaped and is in engagement with the annularly-grooved collar r^0, surrounding the stub-shaft r^2 and secured to and projecting from the gear-wheel r'. A spiral spring r^8 connects the said link or arm r^7 with the upper portion of the hand-lever r^6, and thus normally holds the gear-wheel r' in mesh or engagement with the worm r. A hook-shaped pin r^{10} is preferably secured to the bracket r^3 and engages the top portion of the link or arm r^7 to thus prevent its forked portion from disengaging the annular groove in the collar r^0.

A hand or pointer s^6 is secured to the upper portion of the bracket s^7 and projects outward across and has its point directly in front of and in a convenient position near the graduations on the gear-wheel r'. By this arrangement the amount of material which has

passed through the machine can at any time be quickly ascertained and read from the graduations, and the machine can be stopped when the desired amount of material has been thus registered.

The gear-wheel r' can be rotated in either direction, and whenever the pin s^3 engages the projection of the lever s^2 the said lever is operated, in turn operating the shoe s^0, as will be manifest.

Whenever it is desired to stop the indicator and alarm, the hand-lever r^6 is moved in the direction of the arrow R in Fig. 2, whereby the gear-wheel r' is moved out of engagement with the worm r, but can be readily returned into engagement (assisted by the action of the spiral spring r^8) whenever the said hand-lever r^6 is moved toward its normal position.

I do not make any claim upon the gong-hammer operating and controlling mechanism, as this arrangement is well known in the art; but

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

1. In a combined alarm and indicator of the character described, the combination with the graduated gear-wheel and its operating means, of a stub-shaft on which said gear-wheel is slidingly and revolubly mounted, a bracket carrying said stub-shaft, a hand-lever fulcrumed on said bracket, an annularly-grooved collar secured on the gear-wheel and surrounding the stub-shaft and also slidingly arranged thereon, an arm or link pivotally connected at one end with said fulcrumed hand-lever and engaging with its other fork-shaped end the said annularly-grooved collar, and a spiral spring connecting said link with the hand-lever for normally holding the gear-wheel in engagement with its operating means, substantially as described.

2. In a combined alarm and indicator of the character described, the combination with the graduated gear-wheel and its operating means, of a stub-shaft on which said gear-wheel is slidingly and revolubly mounted, a bracket carrying said stub-shaft, a hand-lever fulcrumed on said bracket, an annularly-grooved collar secured on the gear-wheel and surrounding the stub-shaft and also slidingly arranged thereon, an arm or link pivotally connected at one end with said fulcrumed hand-lever and engaging with its other fork-shaped end the said annularly-grooved collar, a spiral spring connecting said link with the hand-lever for normally holding the gear-wheel in engagement with its operating means, and means for normally holding the fork-shaped end of the link or arm in engagement with the annularly-grooved collar, substantially as and for the purposes described.

3. In a combined alarm and indicator of the character described, the combination with the graduated gear-wheel and its operating means, of a stub-shaft on which said gear-wheel is slidingly and revolubly mounted, a bracket carrying said stub-shaft, a hand-lever fulcrumed on said bracket, an annularly-grooved collar secured on the gear-wheel and surrounding the stub-shaft and also slidingly arranged thereon, an arm or link pivotally connected at one end with said fulcrumed hand-lever and engaging with its other fork-shaped end the said annularly-grooved collar, a spiral spring connecting said link with the hand-lever for normally holding the gear-wheel in engagement with its operating means, and a hook-shaped pin carried by the bracket and engaging said link or arm for normally holding the fork-shaped portion of the latter in engagement with the said annularly-grooved collar, substantially as described.

4. The combination with a frame, of a stub-shaft carried thereby, a gear-wheel slidingly and revolubly mounted on said stub-shaft and provided with an annularly-grooved centrally-arranged collar, a pin projecting from said gear-wheel, a fulcrumed lever in the path of said pin, a spring-controlled shoe in alinement with and adapted to be operated by said fulcrumed lever and carrying a gong-hammer, a gong on the stub-shaft, a revolving shaft for operating said gear-wheel, a hand-lever fulcrumed in the frame, a link pivotally connected at one end with said hand-lever and having its other fork-shaped end in engagement with the said annularly-grooved collar, and a spiral spring connecting said hand-lever with said link for normally holding the gear-wheel in engagement with the revolving shaft and the pin in the path of the shoe-operating fulcrumed lever, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of November, 1897.

ROBERT ATHERTON.

Witnesses:
ALFRED GARTNER,
WM. D. BELL.