

No. 752,393.

PATENTED FEB. 16, 1904.

W. J. GARLICK.  
WARPING MACHINE.

APPLICATION FILED NOV. 24, 1902.

NO MODEL.

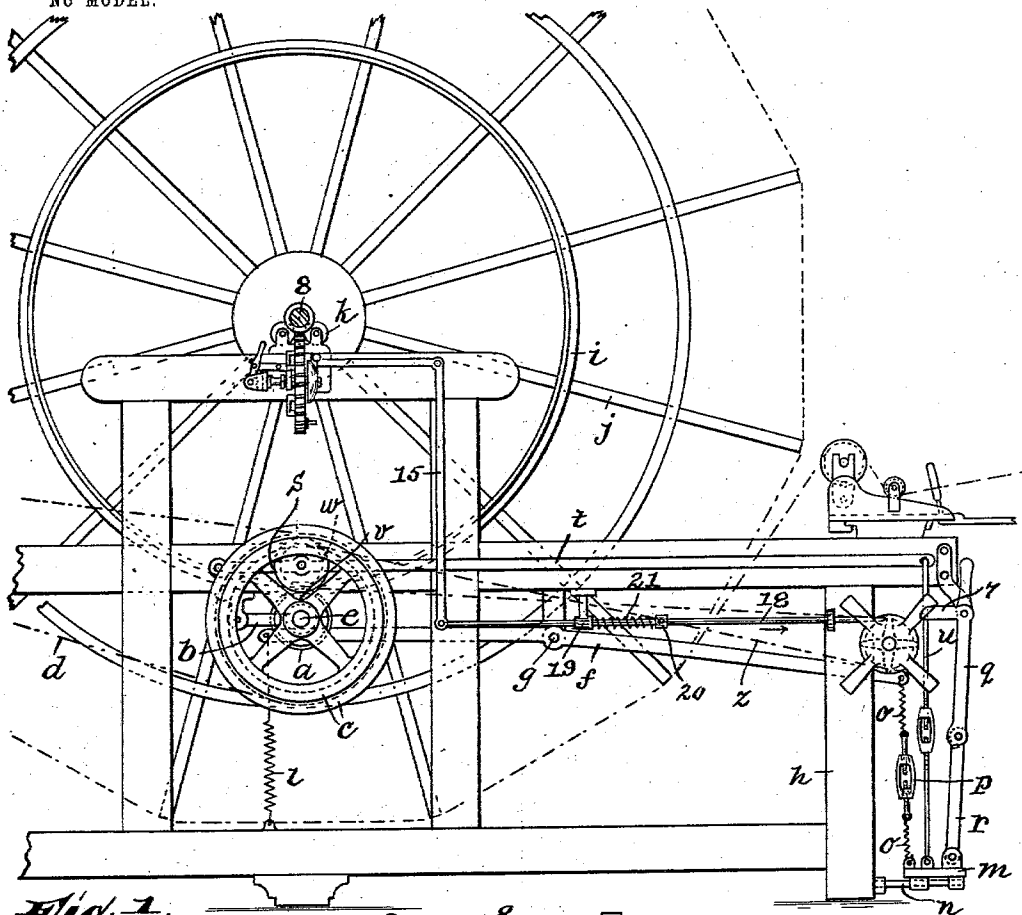
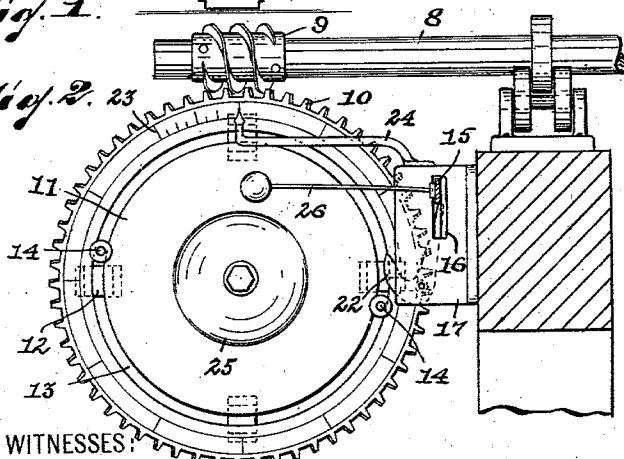


Fig. 1.

Fig. 2.



WITNESSES:

H. Drell.  
J. B. Newton.

Fig. 3.

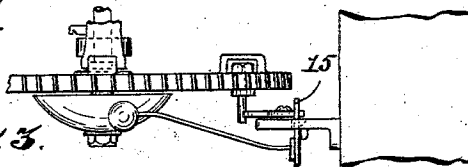
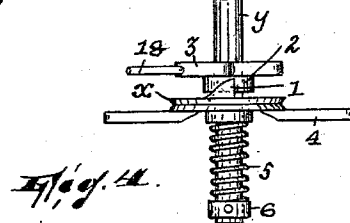


Fig. 4.

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# UNITED STATES PATENT OFFICE.

WALTER J. GARLICK, OF PATERSON, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO BERTHA GARLICK, OF PATERSON, NEW JERSEY.

## WARPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 752,393, dated February 16, 1904.

Application filed November 24, 1902. Serial No. 132,539. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER J. GARLICK, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Warping-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 characters of reference marked thereon, which form a part of this specification.

This invention relates to warping-machines; and it consists in an improvement in warping-machines of the nature of that set forth in United States Letters Patent No. 685,234 and No. 689,357, granted to me October 22, 1901, and December 17, 1901, respectively.

The invention has for its object and it consists in an improved form of throw-out apparatus for a machine of the nature of that above indicated. The invention has for a further object and also consists in an improved mechanism, commonly known as a "clock," for automatically actuating the throw-out mechanism upon the reeling off of a predetermined amount of material.

The invention will be found fully illustrated in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of a warping-machine provided with my invention. Figs. 2 and 3 are respectively front and top plan views of the aforementioned clock, and Fig. 4 is a detail view of a portion of the throw-out mechanism.

$a$  is a friction-wheel which is carried by an arm  $b$  and which is fixed to pulleys  $c$  in such manner as to be driven with said pulleys from the driving-belt  $d$  for the machine, all in the usual manner. The shaft  $e$ , on which friction-wheel  $a$  and pulleys  $c$  are secured, is engaged by a lever  $f$ , which is fulcrumed near its center, as at  $g$ , in the frame  $h$  of the machine in such manner that upon raising the shaft by means of the lever the friction-wheel is brought against the band  $i$  on the reel  $j$ , which latter is arranged, as usual, in friction-bearings  $k$  on the frame  $h$ .

One end of the lever  $f$  is connected to the frame by a spring  $l$ . The other end is connected with a treadle-lever  $m$ , pivoted at  $n$ , by springs  $o$ , connected by an adjustable coupling  $p$ . When the treadle-lever is up, spring  $l$  draws lever  $f$  down, so that friction-wheel  $a$  is drawn out of contact with the band  $i$ ; but when the treadle-lever is depressed it acts through the springs  $o$  and their coupling to overcome spring  $l$  and move lever  $f$ , so as to bring the friction-wheel against the band  $i$ .

$q$  and  $r$  are toggle-levers connecting the frame  $h$  with the treadle-lever  $m$  in such manner that when they are alined the treadle-lever cannot be raised, whereas as soon as their alinement is disturbed spring  $l$  will move lever  $f$  and through springs  $o$  and their coupling raise the treadle-lever.

$s$  is a roller journaled in a lever  $t$ , which is fulcrumed in the frame  $h$  and projects forwardly, its free end being connected with the treadle-lever by an adjustable coupling  $u$ . The roller  $s$  is adapted to engage another roller  $v$  on the shaft  $e$ .

$w$  is a pulley which is fast with the roller  $s$  and which is connected with another pulley  $x$ , revolvably arranged on a rotary shaft  $y$ , journaled in the front part of the frame  $h$  by a cross-belt  $z$ .

1 and 2 designate normally engaging clutch members, the former of which forms a part of the pulley  $x$  and the latter of which is secured upon the shaft  $y$  and is adapted to rotate therewith. The clutch member 2 has formed with it a star-wheel 3, while with the pulley  $x$  are also formed radial arms 4. The clutch members are normally held in contact with each other by a spiral spring 5, which is coiled between the pulley  $x$  and a collar 6, secured on the shaft.

7 is a projection on toggle-lever  $q$ , adapted to be engaged by the radial arms 4.

In view of the foregoing it will be understood that when the parts are in the position illustrated in Fig. 1 the controlling member which treadle-lever  $m$  constitutes being held down by the toggle-levers  $q$  and  $r$ , lever  $f$  maintains friction-wheel  $a$  in contact with the band  $i$  of the reel, so that thereby power is

transmitted to the reel from the belt *d*. At the same time treadle-lever *m* holds lever *t* down, which in turn maintains roller *s* in contact with friction-wheel *v*, so that the rotary movement of the latter is imparted to the former. From the pulley *w*, rotating with roller *s* and through the belt *z*, pulley *x* is driven. This pulley, through the medium of the mechanism shown best in Fig. 4, normally effects the rotary motion of shaft *y*. Should, however, the rotation of shaft *y* be stopped, the continued rotation of pulley *x* brings into play the clutch members 1 and 2, which coact to force the pulley and its radial arms 4 outwardly against the tension of its spring 5 and into the path of the projection 7 on the toggle-lever *q*, as in my United States Patent No. 689,357. One of the radial arms 4 will thereupon engage said projection, thereby effecting the buckling of the toggle-levers and the consequent raising of the treadle-lever, so that roller *a* is thrown out of contact with the band *i* and roller *s* out of contact with roller *v*, and the parts they control are thus cut off from the power.

I effect the stopping of shaft *y* in the present instance from the clock illustrated in Figs. 2 and 3. On the shaft 8 of the reel is a worm 9, which engages the periphery of a worm-wheel comprising the annular toothed part 10 and the disk-like part 11, which is surrounded by said annular part and which is connected thereto by bridge-pieces 12. In the slot 13, formed between the parts 10 and 11, are secured adjustable pins 14.

15 is a bell-crank lever which projects through a slot 16 in a plate 17, secured on the frame *h*, said bell-crank lever being connected with a slide-rod 18, between a support 19 for which and a collar 20 which said rod carries is a spring 21, normally pressing the rod toward the front of the machine—*i. e.*, so as to depress the portion of the bell-crank lever which projects through plate 17.

22 is a latch which is pivoted in the plate 17 and normally sustains the bell-crank lever 15 against the tension of the spring 21, said latch having a portion thereof projecting into the line of movement of the pins 14. The rod 18 is movable under the tension of its spring sufficiently so that its free end may be projected into the path of movement of the points on the star-wheel 3.

The worm-wheel may be provided with indices 23, with which a pointer 24 may coact. 25 is a gong which may also be employed, being adapted to be sounded by a hammer 26, carried by the bell-crank lever 15.

One of the pins 14 being adjusted a distance from the latch 22 which corresponds to the distance between the pointer 24 and a chosen index on the worm-wheel when the predetermined amount of goods has been reeled off a pin 14 will engage latch 22, moving the same and causing it to release the bell-crank lever.

Under the action of spring 21 rod 18, which has been now released, is drawn in the direction of the arrow in Fig. 1. In its new position its point projects into the path of movement of the star-wheel 3, which it thus engages to stop the rotation of shaft *y*.

In this class of machines it is sometimes desirable to move the reel but a short distance at a time. To effect this, the workman simply presses treadle-lever *m* lightly, so that roller *a* is brought against the band *i*, but not sufficiently so that toggle-levers *q* and *r* are alined. When it is intended to keep the machine running any length of time, the treadle-lever is depressed to its full extent—*i. e.*, till the toggle-levers are alined—and thus positively secure the power-transmitting parts in operative connection with each other.

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

1. In a warping-machine, the combination, with the frame and the reel journaled therein, of a revoluble driving device adapted to bear against said reel to rotate the same, a controlling member for said driving device, mechanism operatively connecting said controlling member and the driving device, means for maintaining said controlling member where it holds said driving device engaged with the reel, mechanism adapted to actuate said means to effect the release of said controlling member and comprising a rotary part engageable with said driving device, and other mechanism operatively connecting said rotary part and the controlling member, substantially as described.

2. In a warping-machine, the combination, with the frame, of a rotary part, mechanism adapted to be kept in motion by said rotary part and comprising another rotary part movable into engagement with said first-named rotary part, a movable member adapted to move said last-named rotary part into operative engagement with said first-named rotary part, means for maintaining said movable member where it holds said rotary parts in engagement with each other, other mechanism operatively disposed between said first-named mechanism and the means controlling said member, said mechanism being actuate upon the stopping of said first-named mechanism, and means for stopping said first-named mechanism, substantially as described.

3. The combination, with the frame, of the reel journaled therein, a rotary part adapted to actuate said reel, mechanism adapted to be kept in motion by said rotary part and comprising another rotary part movable into engagement with said first-named rotary part, a lever carrying said last-named rotary part and movable to effect the operative engagement between said rotary parts, toggle-levers, a movable part operatively connected to the frame by said toggle-levers, and means

for connecting said lever with said movable part, substantially as described.

4. In a warping-machine or the like, the combination, with the part to be actuated to stop said machine, of means for maintaining said part in a retracted position, a rotary part of said machine, another rotary part operatively engaging said first-named rotary part and comprising two sections concentrically disposed and spaced from each other to form an endless slot and bridge-pieces secur-

ing said sections together, and pins adjustably arranged in said slot, said pins being adapted to engage said means to actuate the same, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of November, 1902.

WALTER J. GARLICK.

Witnesses:

JOHN W. STEWARD,  
ALFRED GARTNER.