

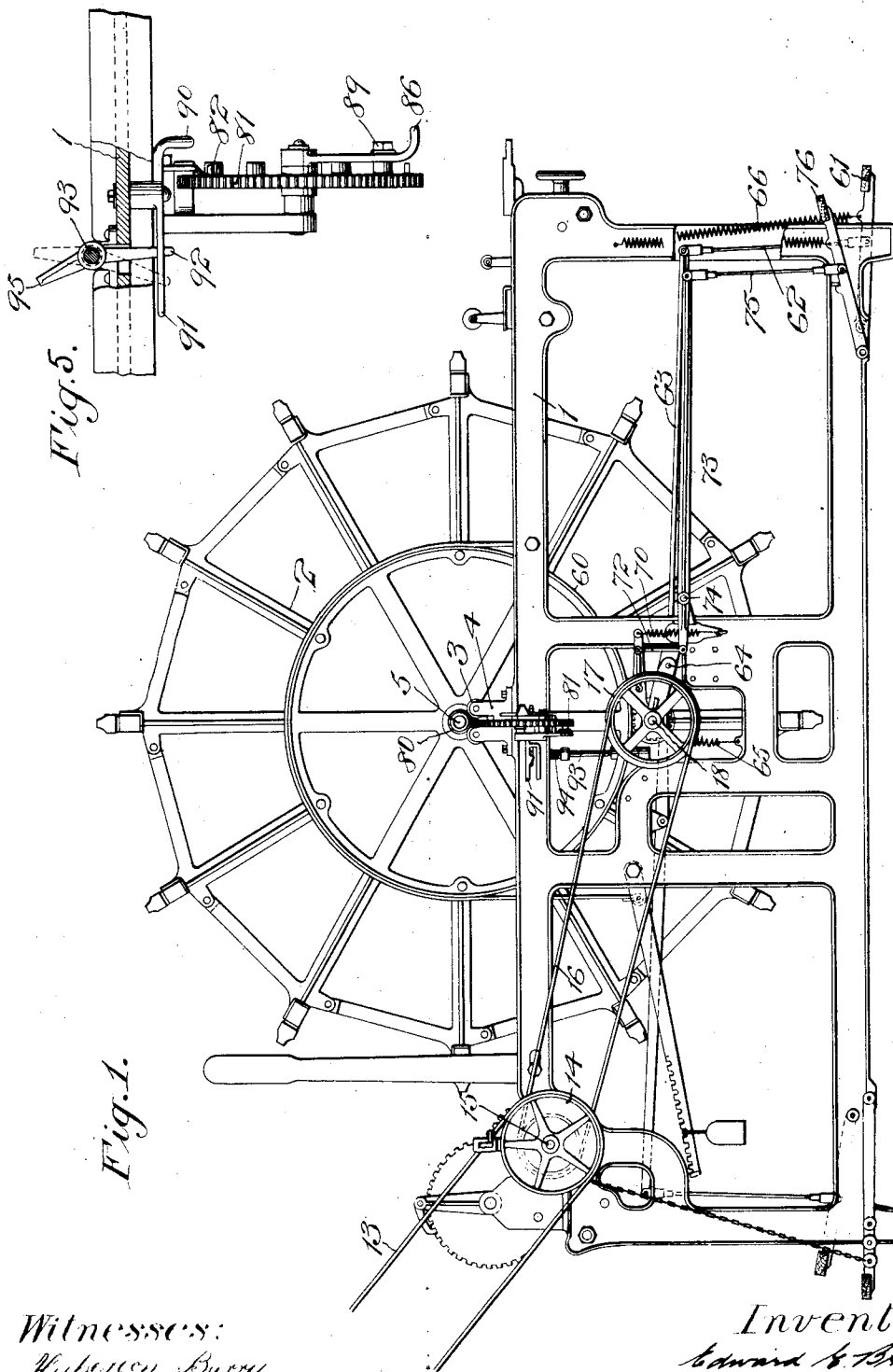
WARPING MACHINE.

APPLICATION FILED JAN. 23, 1914.

Patented Mar. 6, 1917.

2 SHEETS--SHEET 1.

1,218,365.



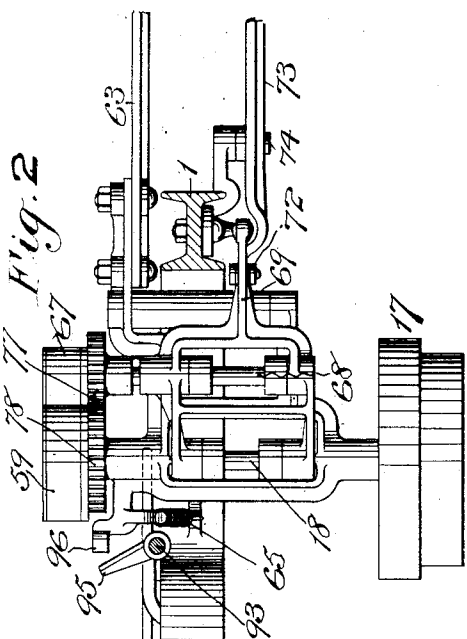
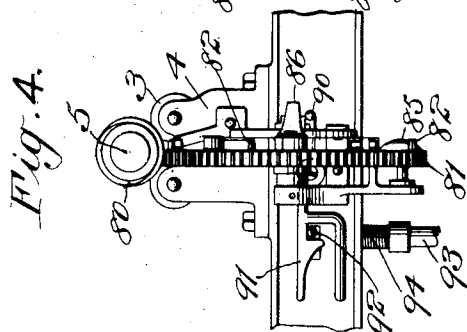
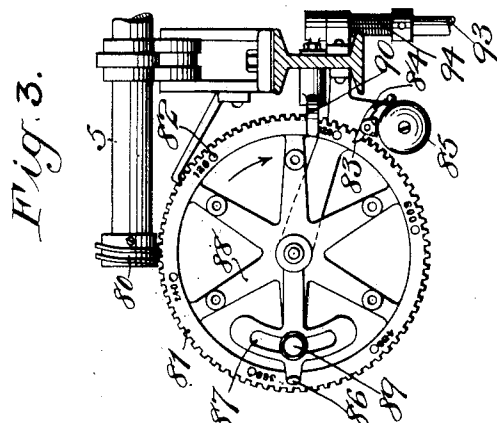
Witnesses:
Hypenon Barry.
J. George Barry.

Inventor:
Edward S. Bradley
by his attorney
Brown & Ward

E. E. BRADLEY.
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Witnesses:
 Hyperion Barry
 George Barnes

Inventor:-
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UNITED STATES PATENT OFFICE.

EDWARD E. BRADLEY, OF STONINGTON, CONNECTICUT, ASSIGNOR TO THE ATWOOD MACHINE COMPANY, OF STONINGTON, CONNECTICUT, A CORPORATION OF NEW JERSEY.

WARPING-MACHINE.

1,218,365.

Specification of Letters Patent.

Patented Mar. 6, 1917.

Original application filed June 6, 1913, Serial No. 772,141. Divided and this application filed January 23, 1914. Serial No. 813,909.

To all whom it may concern:

Be it known that I, EDWARD E. BRADLEY, a citizen of the United States, and resident of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Warping-Machines, of which the following is a specification.

My invention relates to a warping machine and more particularly to mechanism for registering the length of yarn wound on the reel, and for preventing the machine from reeling more than the predetermined length of yarn.

The present application is a division of my pending application Serial No. 772,141, filed June 6, 1913; the latter being directed more particularly to mechanism for shifting the warp threads along the reeds to prevent the cutting or wearing away of the reed.

A practical embodiment of the invention is represented in the accompanying drawings in which,

Figure 1 is a view in side elevation, the peripheral portion of the reel, the warp separating reed and parts associated therewith being omitted.

Fig. 2 is an enlarged detail plan view of the driving mechanism.

Fig. 3 is an enlarged view in detail showing the registering device and parts associated therewith, the registering device being shown in face elevation.

Fig. 4 is a similar view taken at an angle of 90° to the view in Fig. 5, and

Fig. 5 is a top plan view of the same, the frame being broken away to show the locking dog. The latter is shown in full lines out of its locking position and in dotted lines in locking position.

The frame of the machine is denoted by 1, and may be of any well known or approved construction for supporting the several operative parts. The reel for winding the yarn is denoted by 2, and is mounted in suitable bearings, in the present instance, on roller bearings 3, supported upon suitable brackets 4 on the main frame.

The reel shaft is denoted by 5, and is provided with sprocket wheels, not shown in the present application, but shown in the application Serial No. 772,141, of which this is a division, and sprocket chains leading

thence to opposite ends of the wheel, all as shown in said parent application, for enabling the operator to manually operate the parts to set them in proper position for starting under power.

Referring to Fig. 1, a drive belt 13 is shown leading to a pulley 14 on the machine from a suitable source of power, not shown, and from the shaft 15 of the pulley 14, power is transmitted through a belt 16 to a pulley 17 on a shaft 18, for driving the reel, the latter in turn being arranged to drive the registering mechanism.

The reed frame, the means for giving it the usual transverse motion, the hand wheel for returning the frame to its point of starting and the guide bar in cooperative relation to the reed frame and over which the warps pass after passing through the reeds, together with the means for shifting the guide bar, are matters particularly shown, described and claimed in the parent application above referred to and are not particularly shown and described herein.

For registering the length of yarn to be reeled, the shaft 5 of the reel is provided with a worm 80, see Figs. 3 and 4, which engages the teeth of a worm wheel 81, the side of which is divided into sections indicating in the present instance, yards. The numerals in the illustration given are placed at one-sixth of a circumference apart, the interval between the two numbers being the distance which the registering wheel 81 will move for winding one hundred and twenty yards on the reel. For each of these subdivisions of one hundred and twenty yards, a pin 82 is set in the side of the wheel 81, which pin in passing a predetermined point, engages the toe 83 of a pivoted hammer 84 and rings a bell 85 to warn the operator at the conclusion of the winding of each one hundred and twenty yards. In order to determine the number of yards which it is desired to wind on the reel at one time, a finger 86 is mounted co-axially with the wheel 81, so that it may be swung into position to engage an actuating mechanism at any desired point within the limits of the registering wheel, that is, in the present instance, up to seven hundred and twenty yards. The shank of the finger 86 is provided with a laterally elongated slot 87, through which the finger 86 may be fixed to any one of the

six arms 88 of the wheel 81, by means of the set screw 89, and furthermore, the finger 86 may be set at any point intermediate of two arms by swinging it in the one direction or the other along the slot 87 before clamping it by the screw 89. When the finger 86 has been set in the desired position, it will, upon the completion of the winding of the desired number of yards, engage the end 90 of a rocking latch 91, see Fig. 4, and lift it out of engagement with the pin 92 on a shaft 93 and thereby permit the shaft under the tension of a spring 94, to rotate sufficiently to swing a stop arm 95, over the end of a projection 96 on the end of the lever which carries the drive shaft 18, thereby locking the lever 63, controlled by the pedal 61, against being lifted by the depression of said pedal and thereby preventing the engagement of the friction drive pulley 59 with the rim 60 on the reel.

As the reel is rotated to wind the yarn only so long as the operator has the lever 63 depressed by means of the pedal 61, and as the operator warned by the bell, which strikes at the limit of each section of one hundred and twenty yards wound, watches for the finger 86 to drop the latch 91 and removes his foot from the pedal as the latch is dropped, the movement of the pulley 59 away from the reel to stop its action, will spring back the stop arm 95 sufficiently to permit the extension 96 to pass it and the stop arm will then promptly swing into position over the extension 96, so that no further winding action will take place inadvertently or otherwise until the stop arm

95 has been manually swung back into position out of the way of the extension 96 and the latch 91 turned down in position to engage the pin 92, thereby holding the stop arm 95 out of position.

In practice, the operator quickly lifts his foot from the pedal and places a mark as the bell rings at the end of each interval of one hundred and twenty yards, throughout the winding of the section, and the stop finger is so placed that it will lock the friction drive pulley against motion toward the driving rim on the reel when the end of the section has been reached, so that the reel cannot be started again in the event the operator should inadvertently try to do so either from forgetfulness or otherwise.

What I claim is:

In a warping machine, a reel, a registering wheel driven by the reel, a finger carried by the registering wheel, a lever, a reel driving pulley mounted on the lever and movable with the lever toward and away from the reel, a spring actuated stop in position to lock the said lever and hence the driving pulley against movement toward the reel and a swinging latch under the control of the finger on the registering wheel for releasing the said spring actuated stop.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this fourteenth day of January 1914.

EDWARD E. BRADLEY.

Witnesses:

JOS. F. JOSEPH,
THEODORE DEWILBURST.