

(No Model.)

2 Sheets—Sheet 1.

A. E. RHOADES.
MECHANISM FOR HANDLING BEAMS.

No. 504,458.

Patented Sept. 5, 1893.

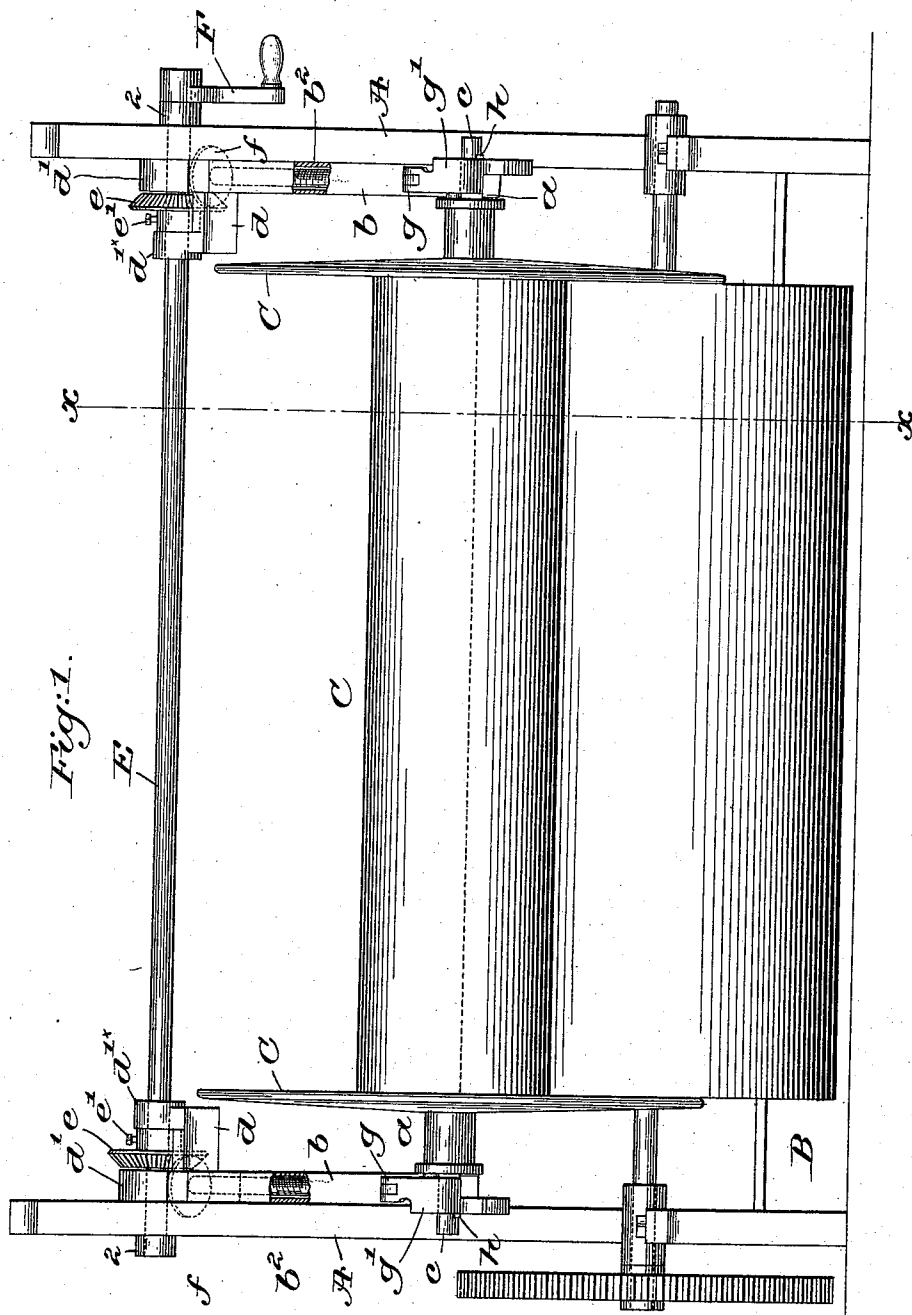


Fig. 1.

Witnesses.

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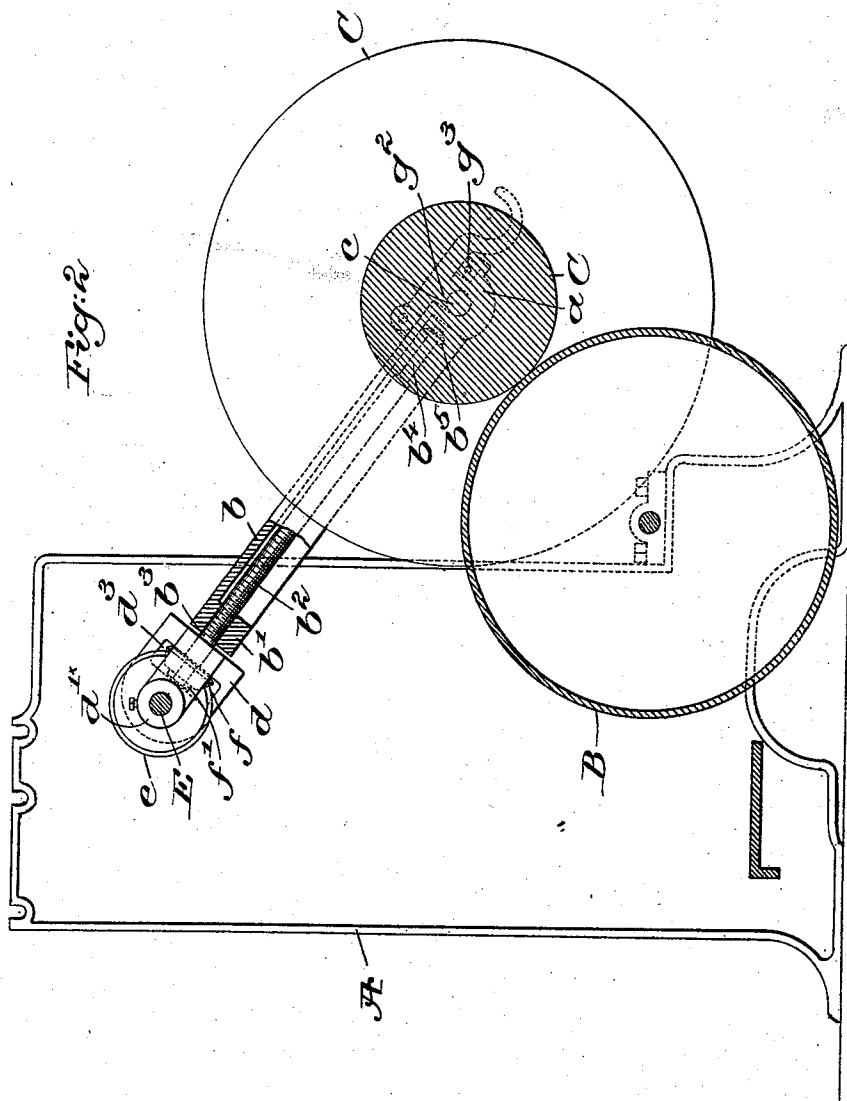
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witnesses.

Edward F. Allen.

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UNITED STATES PATENT OFFICE.

ALONZO E. RHOADES, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE
HOPEDALE MACHINE COMPANY, OF SAME PLACE.

MECHANISM FOR HANDLING BEAMS.

SPECIFICATION forming part of Letters Patent No. 504,458, dated September 5, 1893.

Application filed March 24, 1893. Serial No. 467,482. (No model.)

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Mechanism for Handling Beams, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to mechanism for facilitating the handling of heavy rolls, such as warp beams, in the transfer of such rolls to or from the apparatus for filling them, and it has for its object the production of mechanism to support a roll or beam while being filled, said mechanism being adapted to move the roll or beam bodily toward or from the floor, in its transfer when empty or filled, means being provided for preventing undue motion of the beam, substantially as will be described.

I have herein illustrated my invention in connection with the warp beam of a warping machine, but it may be used in connection with any class of apparatus adapted to wind material upon a beam whereby an unwieldy and heavy mass is made.

Figure 1 of the drawings represents a beam and means to handle it embodying my invention, and Fig. 2 is a sectional view taken on the line $x-x$ Fig. 1.

The frame-work A, of suitable shape to contain the working parts, has, as herein shown, a rotatable winding shaft or drum B, which may be rotated by the mechanism shown in another application, Serial No. 467,481, filed by me March 24, 1893, or in any suitable or usual manner common to warping machines, looms or paper winding machines.

The beam C to be wound or filled with yarn or other suitable material rests upon and is rotated by the drum B, as shown, said beam having usual enlarged heads beyond the ends of the drum and suitable journals c adapted to rest in bearings a , shown best in dotted lines Fig. 2, at the lower ends of pivotally supported arms herein shown as composed of longitudinally sliding members b , one for each journal of the beam, each of said members having at its upper end b' , see Fig. 2, an opening having in the one case a right-hand, and in the other case a left-hand thread cut

therein to receive rods b^2 similarly provided with right and left-hand threads for a portion of their length, the threaded portions of the rods normally engaging the threads in the openings, so that rotation of said rods in opposite directions will move the sliding members b simultaneously in one or the other direction along the rods b^2 carrying therewith the beam c for a purpose to be described. The unthreaded upper ends b^3 of the said rods are extended through suitable bearings in swinging frames d , journaled on an independent operating cross shaft E extending from one to the other side of the machine and having suitable collars 2 thereon to prevent longitudinal movement thereof.

As best shown in Fig. 1, the swinging frames d are provided with parallel arms d' d'' , having openings therethrough to receive the cross shaft E, and between the said arms like bevel gears e are secured to the said shaft by suitable set screws extended through the hubs e' thereof, the said hubs serving to maintain the swinging frames in proper position upon the shaft, the gears e meshing with bevel gears f secured to the ends b^3 of the threaded rods above the bearing therefor in the swinging frame, the arms d' being slotted, as at d^3 , to receive said gears f and permit free rotation thereof, the gears f being retained in place on the threaded rods by a suitable nut f' , see dotted lines Fig. 2.

Referring to Fig. 2 the lower end of the threaded rod is shown as reduced in thickness, as at b^4 , see dotted lines, and has secured to its extremity a suitable nut b^5 of a greater diameter than the threaded opening in the sliding members b . The lower ends of the said members b are provided with suitable ears g in which caps g' are pivoted, said caps having a downwardly extended portion g^2 see dotted lines Fig. 2, to enter the bearings for and rest upon the journals c of the beam, and a locking projection g^3 is provided upon the under side of the cap to enter a similarly shaped recess adjacent to the bearing, and a locking pin h is extended through a suitable opening in one of the sides of the recess and into the projection g^3 , whereby the cap is locked in position to retain the journals in their bearings.

The cross shaft E is provided with suitable means for manually rotating the same, herein shown as a crank F.

As will be seen from the foregoing description and an inspection of the drawings, the arms are pivotally supported or journaled upon the cross shaft E and are extensible, the pivotal movement permitting the gradual lifting of the beam as the mass being wound thereon increases in diameter.

When it is desired to remove the beam from the filling apparatus, the crank F is turned to rotate the shaft E in the proper direction, motion being transmitted through the gears e and f to the threaded rods b^2 , the latter in their rotation in opposite directions in the threaded openings in the sliding members b moving the same longitudinally in an outward and downward direction until the beam is lowered sufficiently to rest on the floor or to be placed on a suitable truck placed thereunder. If for any reason the rotation of the shaft E should be continued until the lower extremity of the threaded portion of the rods has been reached, the sliding members b will be moved onto the reduced portions b^4 and retained from further longitudinal movement by the nuts b^5 . When the beam has been lowered sufficiently the caps are unlocked and thrown back, and the journals of the beam detached from their bearings in usual manner. By making the arms longitudinally extensible, beams of different sizes may be readily accommodated, and the threaded connection between the two parts of the extension arms forms a locking device, so that a positive rotation of the threaded rods b^2 is necessary to move the two parts of the arm with relation to each other to alter the position of the beam with relation to the winding drum.

This invention is not limited to the precise construction or arrangement of parts herein

shown, as the same may be considerably varied without departing from my invention.

I claim—

1. The sliding members b having journal bearings, threaded rods engaging threaded portions of said members, a shaft, and gearing between said shaft and threaded rods to rotate the latter and thereby move the sliding members longitudinally toward and from the gearing for actuating the threaded rods, substantially as described.

2. The driving drum, and a beam provided with journals and normally resting thereon, combined with longitudinally adjustable arms for the beam each comprising a rotatable member and a member longitudinally movable thereby and having bearings for the beam journals, pivotal supports for the rotating members, means to rotate them, and connections between the members of each arm to retain them in adjusted position, substantially as described.

3. The driving drum, a beam normally resting thereon and provided with journals, and longitudinally adjustable supporting arms for the beam, each arm comprising a rotatable threaded rod, and a longitudinally movable member provided with a threaded opening, through which said rod is extended, and having journal bearings, a rotatable shaft upon which said rods are loosely mounted, and gearing between said shaft and rods to rotate the latter and adjust the length of the arms, substantially as described.

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

ALONZO E. RHOADES.

Witnesses:

GEO. E. STIMPSON,
H. W. BRACKEN.