No. 674,424. Patented May 21, 1901.

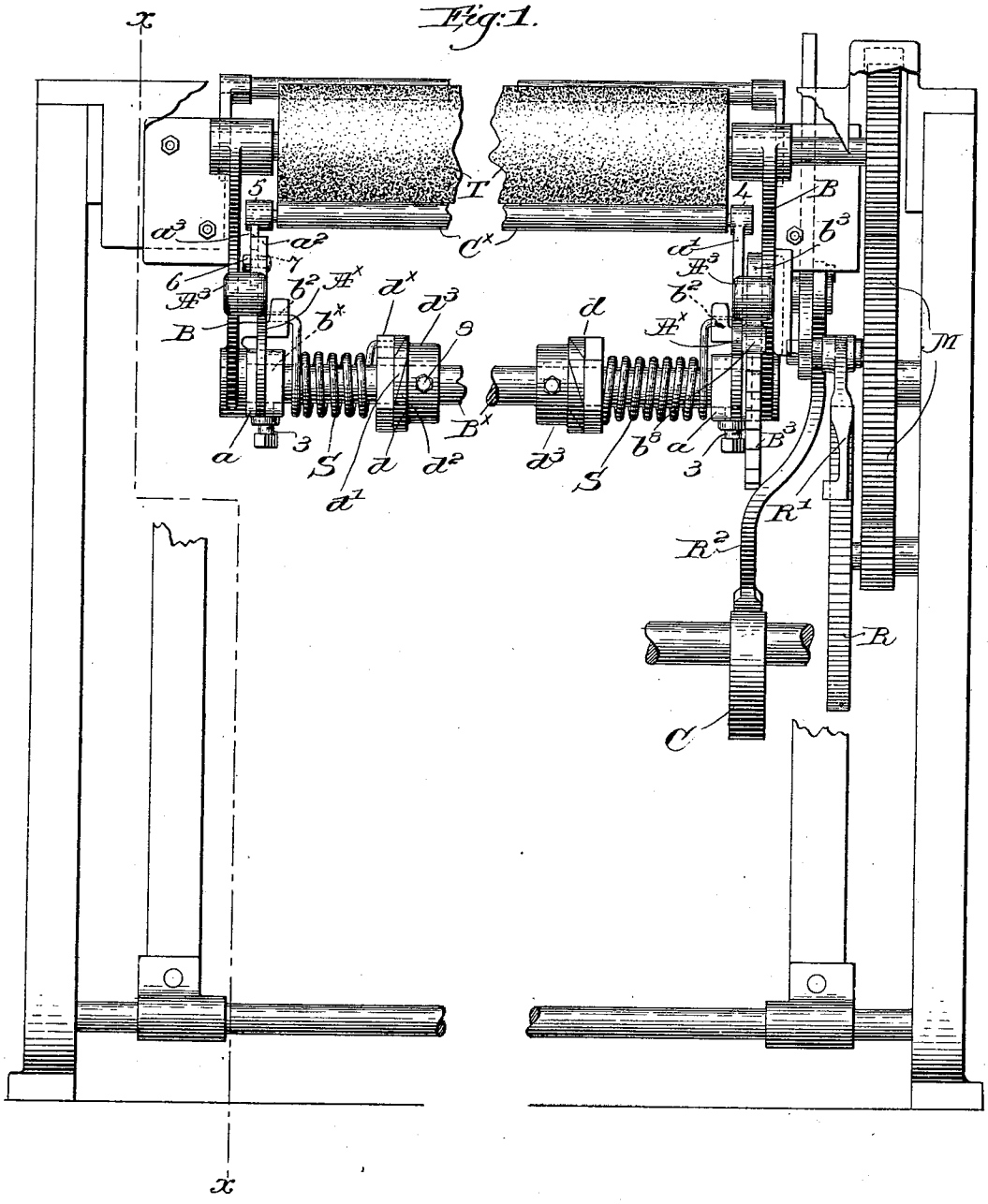
J. T. MEATS.

TAKE-UP MECHANISM FOR LOOMS.

(Application filed Jan. 21, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



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Fig. 2.

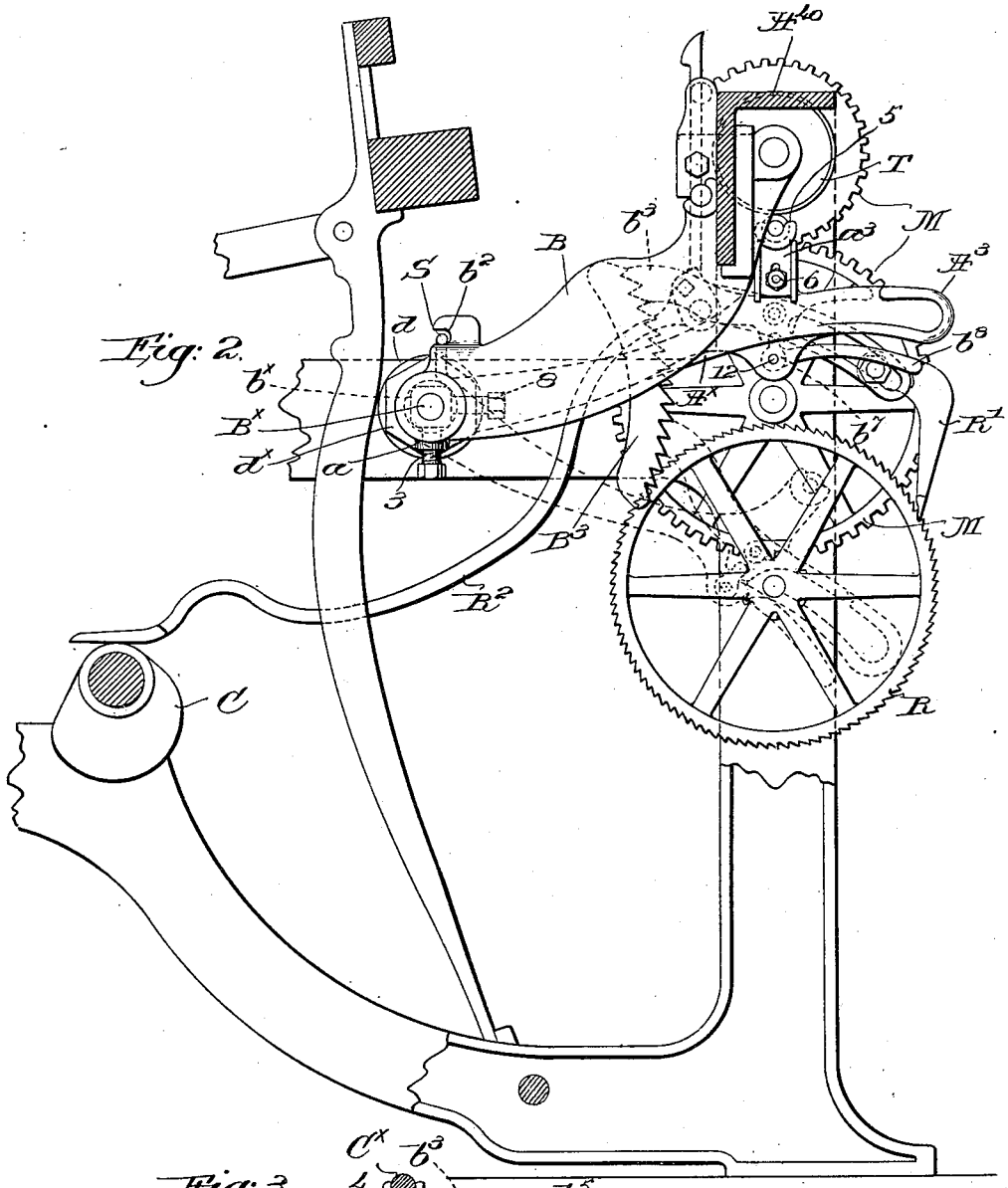
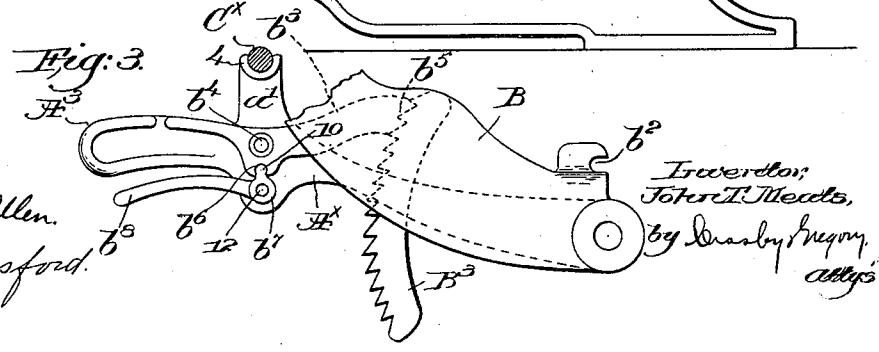


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN T. MEATS, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO MASON MACHINE WORKS, OF SAME PLACE.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 674,424, dated May 21, 1901.

Application filed January 21, 1901. Serial No. 44,013. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. MEATS, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Take-Up Mechanism for Looms, 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 more particularly to the take-up mechanism of looms; and it has for its object the improvement and simplification of the cloth-winding devices whereby the convenience of the weaver in moving the cloth-roll in and out of the loom is greatly increased, as also are the facilities for the loom-fixer in obtaining access to the interior of the loom.

Various novel features of my invention will be hereinafter described, and particularly pointed out in the following claims.

Figure 1 is a front elevation, centrally broken out to save space, of a portion of a loom with one embodiment of the invention applied thereto. Fig. 2 is a vertical sectional view thereof on the line x x, Fig. 1, looking toward the right; and Fig. 3 is a detail showing in side elevation one of the swinging arms provided with the device for manually controlling the locking means.

I have herein shown my invention as applied to that type of loom wherein the cloth passes directly from the fell to the take-up roll without first passing over the usual breast-beam, the cloth as it winds on the cloth-roll being pressed upward against the take-up roll instead of resting upon it in the usual way.

Referring to the drawings, the ratchet-wheel R, take-up pawl R′, the weft-hammer R^2, operated by the usual cam C, the take-up roll T, and the train of gears M between the take-up roll and the ratchet-wheel may be and are all of well-known or usual construction and form no part of my invention.

I have herein shown brackets B rigidly attached to the transverse guard A^{40} and extended back of and below the same to form bearings for a shaft $B^{\times}$, extended from one to the other bracket, the location of the latter being manifest from an inspection of Fig. 1, the said shaft being provided near each of its bearings with squared or polygonal portions $b^{\times}$ (see dotted lines, Fig. 1) to enter correspondingly-shaped holes in the hubs a of arms $A^{\times}$, the said arms being rigidly held on the shaft by suitable set-screws 3. The arms extend forward below the transverse guard, and they are provided with bearings for the journals of the cloth-roll $C^{\times}$, and I prefer to make the bearing and one of the arms vertically adjustable or adjustable for a purpose to be described.

Referring to Fig. 1, the right-hand one of the arms $A^{\times}$ has an upturned end to present the journal-bearing, which is non-adjustable relatively to the arm; but the left-hand one of the arms $A^{\times}$ has its upturned portion a^2 grooved to receive a plate a^3, carrying at its upper end the journal-bearing 5, and this plate is held in adjusted position on the part a^2 by means of a bolt 6, which may be conveniently passed through a slot 7 in the part a^2.

By providing an adjustable bearing at one end of the cloth-roll I am enabled to adjust the latter to bring it into exact parallelism with the take-up roll, and thereby cause uniform pressure throughout the length of the cloth-roll.

I have provided for the spring-control of the shaft $B^{\times}$ to cause the cloth-roll to be yieldingly pressed against the take-up roll and with a gradually-augmented pressure as the diameter of the cloth-roll increases, and herein I have shown the shaft as provided with two strong springs S coiled around it, one end of each spring being fixedly held in a notch b^2 in a part of the adjacent bracket B, the other and free end of each spring entering a hole in a clutch-nut d, rotatably mounted on the shaft and having a series of clutch-teeth d' to coöperate with an opposed series of teeth d^2, secured to or forming part of a collar d^3, tightly secured, as by a set-screw 8, to the shaft. The clutch member d' has a polygonal periphery, as $d^{\times}$, (see Figs. 1 and 2,) so that by the application of a wrench thereto and turning the clutch member d' in

the proper direction its spring can be tightened to the desired degree to effect the necessary pressure between the cloth-roll and the take-up roll.

At the beginning of the winding the arms $A^{\times}$ are elevated into their full-line position, (shown in Figs. 1 and 2,) and in the latter figure I have shown in dotted lines the position of the arms when a large amount of cloth has been wound upon the cloth-roll.

I have provided locking means to hold the cloth-roll away from or out of contact with the take-up roll at any desired point within required limits, and herein I have shown one of the brackets B, provided with a fixed locking member, shown as a toothed segment B^3, to coöperate with a locking movable pawl b^3, pivotally mounted at b^4 (see Fig. 3) on the adjacent arm $A^{\times}$, the pawl at its rear end being notched, as at b^5, to engage the segment B^3, the weight of the pawl normally keeping it in engagement with the segment as the arms swing down, due to the gradual increase in the diameter of the roll of cloth.

The arms $A^{\times}$ are shown as extended well forward beyond the bearings for the cloth-roll to provide handles A^3, and if the operator desires to depress the cloth-roll and withdraw it from contact with the take-up roll he grasps one or both of the handles A^3 and depresses the arms until the cloth-roll is brought to the proper point, and the parts will be held in such position by the locking means described, as the pawl b^3 clicks over the teeth of the segment until the desired point is reached at which the arms are to be locked, whereupon upward movement of the arms is prevented by the engagement of the pawl and said segment. Assuming the arms to be so locked in position when it is desired to again bring the cloth-roll into operative position the operator without removing his hand from the handle A^3 manipulates a releasing device, which withdraws the pawl b^3 from operative position, and the springs S will lift the cloth-roll into operative position.

Referring to Fig. 3, the locking-pawl below its fulcrum b^4 is provided with a notch b^6 to receive a lug 10 of a cam or eccentric b^7, which is extended forward below the adjacent handle A^3. If the operator grasps the handpiece b^8 and draws it upward as by closing his hand upon it and the handle A^3, the cam b^7 will operate to lift the rear or notched end of the pawl and also to withdraw it from engagement with the rack B^3, so that the locking means is rendered inoperative.

By using a spring or springs to control the rock-shaft $B^{\times}$ it will be obvious that the pressure between the cloth-roll and the take-up roll will be gradually augmented as the quantity of cloth increases, because the tension of the springs will be increased by the gradual descent of the supporting-arms $A^{\times}$.

The particular form of supporting-bracket or the particular arrangement of springs herein shown and described may be varied or rearranged without departing from the spirit and scope of my invention.

By the construction herein shown I obviate the usual side brackets which support the take-up roll and take-up mechanism, and I also obviate cross-shafts and other mechanisms between the cloth-roll and the floor of the room, thereby greatly simplifying the construction of the loom, and thereby affording more room for the loom-fixer to make the usual adjustments and repairs than is possible in the ordinary types of looms now in general use.

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

1. In take-up mechanism for looms, a take-up roll, a rotatable shaft, arms fixed thereto and adapted to support the cloth-roll, and springs fixed at one end and secured at their other ends to the shaft, to press the cloth-roll against the take-up roll with an augmented pressure as the diameter of the cloth-roll increases.

2. In take-up mechanism for looms, a take-up roll, a rotatable shaft, arms fixed thereto and adapted to support the cloth-roll, springs surrounding the shaft and fixed at one end and clutches on the shaft connected to the other ends of the springs, whereby the tension of the latter can be varied, the springs acting with augmented force to press the cloth-roll against the take-up roll as the diameter of the latter increases.

3. In take-up mechanism for looms, a take-up roll, swinging bearings for the cloth-roll, means to yieldingly press the latter against the take-up roll, and means to positively lock the cloth-roll out of contact with the take-up roll.

4. In take-up mechanism for looms, a take-up roll, swinging bearings for the cloth-roll, means to yieldingly press the latter against the take-up roll, and means to prevent retrograde movement of the swinging bearings and lock the latter in a position with the cloth-roll out of contact with the take-up roll.

5. In take-up mechanism for looms, a take-up roll, swinging bearings for the cloth-roll, means to yieldingly press the latter against the take-up roll, means to lock the cloth-roll in a position out of contact with the take-up roll, and a releasing device for the locking means.

6. In take-up mechanism for looms, a take-up roll, pivotally-mounted spring-controlled arms having bearings for the cloth-roll, a fixed rack, and a coöperating locking-pawl mounted on one of the arms, coöperation of the pawl with the rack serving to lock the arms in any desired position.

7. In take-up mechanism for looms, a take-up roll, pivotally-mounted spring-controlled arms having bearings for the cloth-roll and extended at their free ends to form handles,

locking means comprising a fixed and a coöperating movable member, the latter mounted on one of the arms, and a manually-controlled releasing device to render said movable member inoperative.

8. In take-up mechanism for looms, the cloth-roll, a take-up roll, supporting means for the cloth-roll, and independent means for vertically adjusting the supporting means to bring the cloth-roll into parallelism with the take-up roll.

9. In take-up mechanism for looms, the cloth-roll, a take-up roll, swinging, spring-controlled arms provided with bearings for the cloth-roll, and independent means to vertically adjust one of said bearings.

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

JOHN T. MEATS.

Witnesses:
JOHN C. EDWARDS,
GEO. W. GREGORY.