

(No Model.)

3 Sheets—Sheet 1.

J. RIDDIOUGH.
TAKE-UP MECHANISM FOR LOOMS.

No. 427,270.

Patented May 6, 1890.

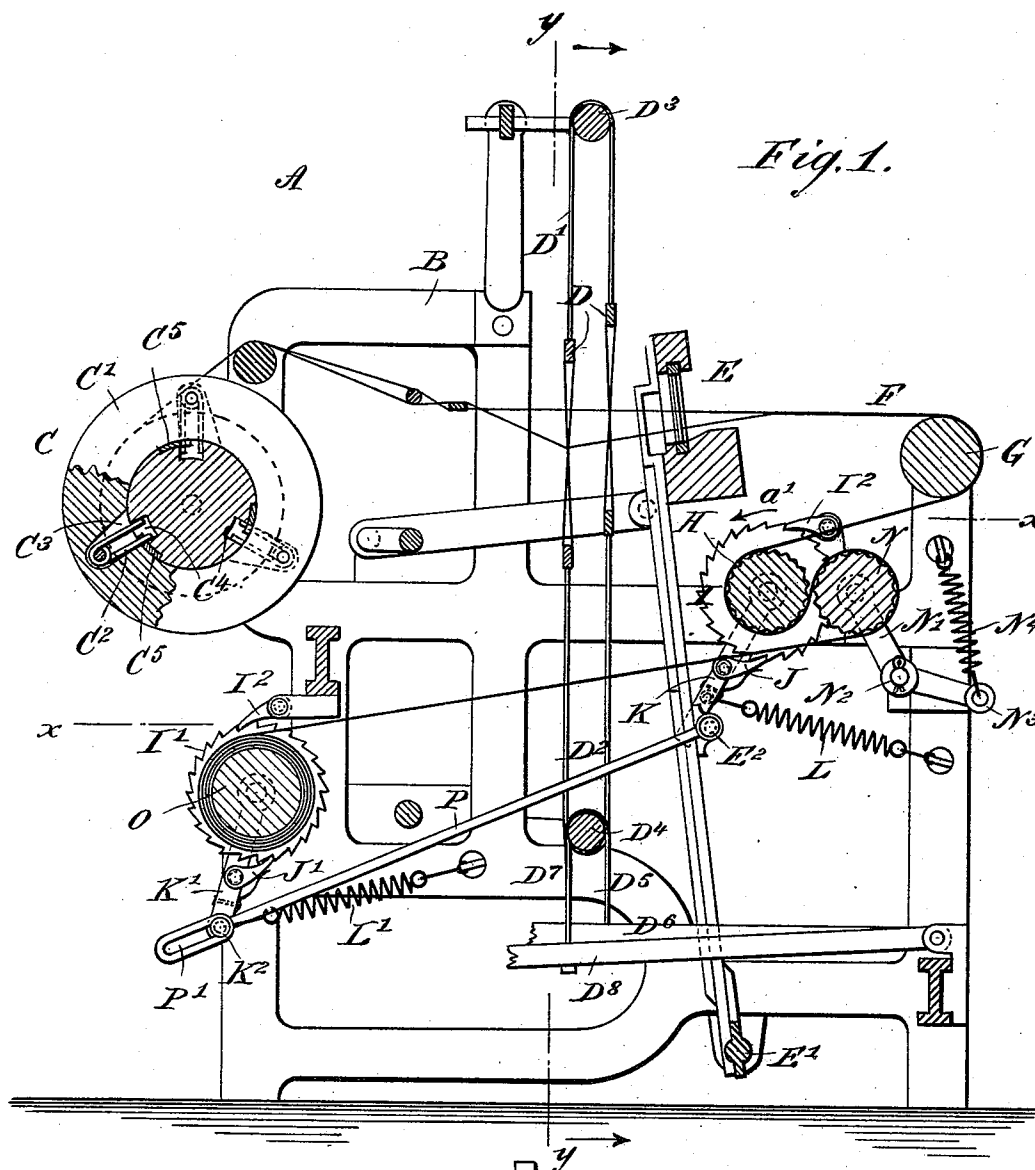


Fig. 1.

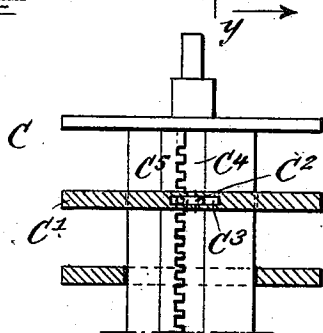


Fig. 4.

WITNESSES:

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BY *Munn & Co.*
ATTORNEYS.

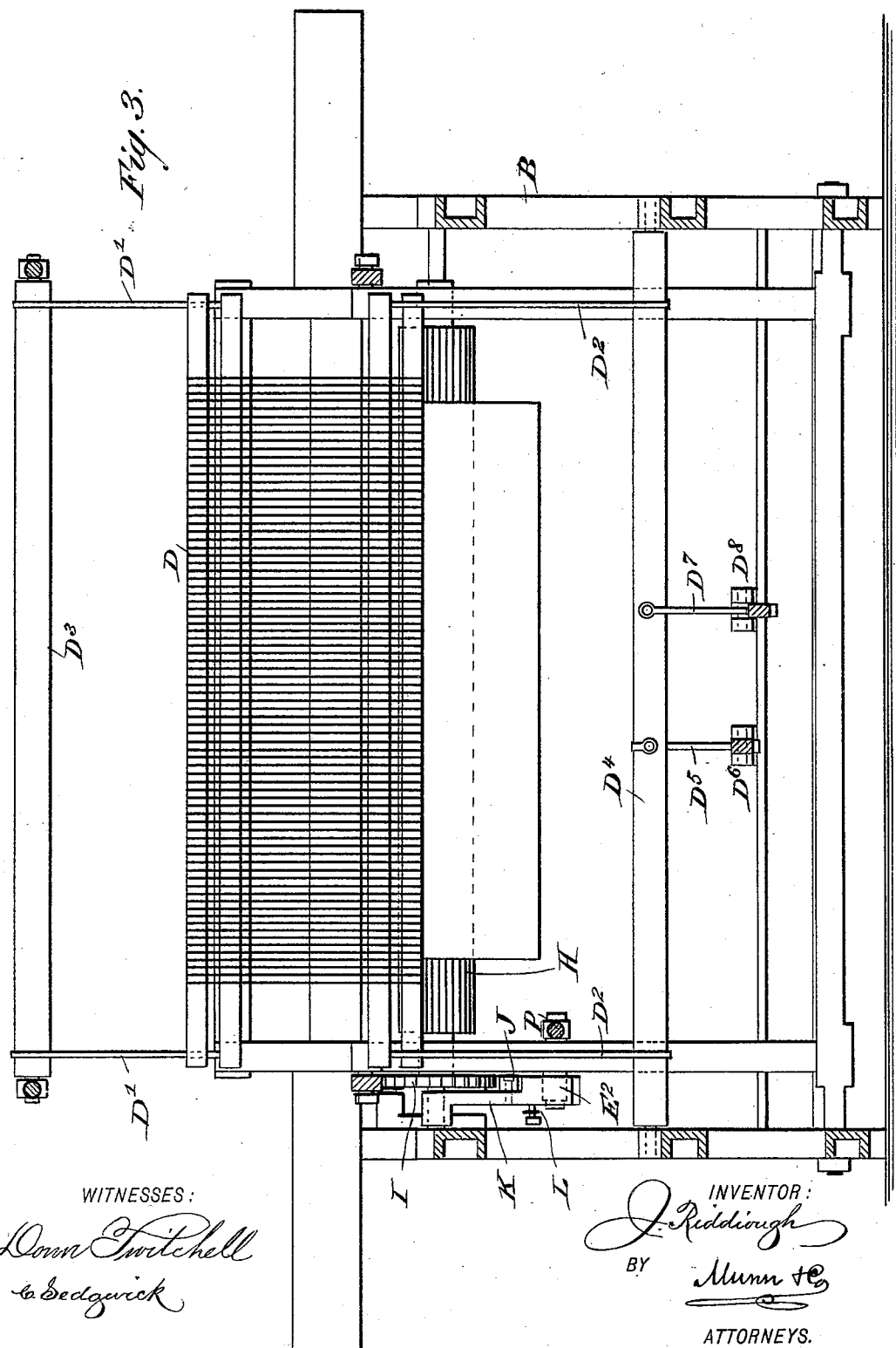
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

JOHN RIDDIOUGH, OF BLOOMINGTON, WISCONSIN.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 427,270, dated May 6, 1890.

Application filed October 3, 1889. Serial No. 325,888. (No model.)

To all whom it may concern:

Be it known that I, JOHN RIDDIOUGH, of Bloomington, in the county of Grant and State of Wisconsin, have invented new and Improved Take-Up Mechanisms for Looms, of which the following is a full, clear, and exact description.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of a loom with the improvement applied thereto, having parts broken out. Fig. 2 is a sectional plan view of the same on the line *xx* of Fig. 1. Fig. 3 is a transverse section of the same on the line *yy* of Fig. 1, and Fig. 4 is a plan view of one end of the warp-beam with parts in section.

The loom A is provided with the usual frame B, on one end of which is journaled the warp-beam C, from which the warps pass to the harness D and the lay E, to be formed into the fabric F, which passes over the breast-beam G, and from the latter around a roller H, which may be smooth or corrugated. On the roller H is secured a ratchet-wheel I, engaged by a pawl J, pivoted on a lever K, loosely fulcrumed on the shaft of the said roller H, and connected with one end of a spring L, secured at its other end to the frame B. The spring L is arranged in such a manner as to press the lever K forward, so as to turn the ratchet-wheel, and consequently the roller H, in the direction of the arrow *a'*, so that the cloth F is drawn from the roller G over the said roller H. The return movement of the lever K is accomplished at each return-stroke of the lay E, the latter swinging on its fulcrum E', and being provided midway with a pin E², projecting sufficiently to engage the free end of the lever K. When the lay E moves toward the fabric, the pin E² passes away from the lever K, so that the spring L presses on the said lever, which, by its pawl J, acts on the ratchet-wheel I, se-

cured on the roller H. When the lay E is on its return-stroke, the pin E² again engages the lever K and moves the latter back to its former position. The operation is repeated during each full stroke of the lay. The fabric, after leaving the roller H, passes over a smooth or corrugated roller N, loosely journaled in the upper ends of arms N', pivoted on studs N², secured to the main frame B, and provided with arms N³, each connected with one end of a spring N⁴, secured at its other end to the main frame B. The springs N⁴ have the tendency to press the roller N toward the roller H, so that the cloth passing over the said roller H is pressed between the rollers H and N. The fabric, after leaving the roller N, is wound on the cloth-beam O, journaled in the usual manner in the main frame B, and provided with an actuating device similar to the one on the roller H—that is, a ratchet-wheel I' is secured on the cloth-beam O, and is engaged by a pawl J', pivoted on a lever K', fulcrumed loosely on the shaft of the cloth-beam O. The spring L' presses on the said lever K', and the latter derives its return motion from the lay E by means of a rod P, pivotally connected with the lay E, and provided with an elongated aperture P', through which passes a pin K², secured on the said lever K'. When the lay E moves forward toward the fabric F, the slot P' passes over the pin K², so that the spring L' is free to act on the lever K' in a manner similar to that in which the spring L acts on the lever K, as before described. When the lay E is on its return-stroke, the rod P moves the lever K' back to the former position.

It will be seen that the roller H and the cloth-beam O have a simultaneous movement in the same direction, caused by the action of the springs. The forward movement of the levers K and K', the said roller, and cloth-beam is accomplished by the springs L and L' acting on the said levers, which, by their pawls J and J', turn the ratchet-wheels I and I', and consequently the roller H and the cloth-beam O. The return movement of the levers K and K' is accomplished through the return movement of the lay E by the pin E² and the pin K², as previously described. A

return movement of the roller H, as well as the cloth-beam O, during the return movement of the levers K and K' is prevented by pawls I², fulcrumed on the frame B and engaging the ratchet-wheels I and I', respectively, as is plainly shown in Fig. 1.

The warp-beam C is preferably of the construction illustrated in Figs. 1 and 4, being provided with a series of adjustable collars C', each provided with two or more springs C², held in recesses C³ in the said collars and extending into longitudinally-extending recesses C⁴, formed in the warp-beam proper. A series of notched plates C⁵, corresponding in number to the number of springs on each collar, is secured to the warp-beam, and their notches extend into the said recesses C⁴, to be engaged by the ends of the said springs C². The latter hold the respective collars C' at any desired place on the warp-beam, the several collars being placed suitable distances apart and the warp-threads being placed in sets between the several collars on the warp-beam.

The harness D is preferably of the construction shown in the drawings, being supported at its upper ends and on its sides by the ropes D', passing over a roller D³, journaled in the upper ends of the frame B. Ropes D² are secured to the lower ends of the harness D and pass around a roller D⁴, journaled in the lower part of the main frame B. On this roller D⁴ are secured at opposite sides the ropes D⁵ and D⁷, extending downward and connected with the treadles D⁶ and D⁸, respectively. The ropes are arranged on the sides of the loom, so that the fabric F can pass between the same.

When the treadle D⁶ is pressed downward, the roller D⁴ turns in one direction, thus changing the harness and at the same time winding up the other rope D⁷ and raising the treadle D⁸. If the latter is now pressed downward, the roller D⁴ turns in the opposite direction, then changing the harness and raising the other treadle D⁶.

It is understood that instead of the springs L L' and N⁴ suitable weights may be employed to accomplish the same result.

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

1. The combination, with the frame, a cloth-beam provided with a ratchet, a reciprocating lay, and a breast-beam in front of the lay, of a lever provided with a pawl engaging said ratchet and a laterally-extending pin, a rod pivoted at its forward end to the lay and having a longitudinally-extending slot at its rear end receiving the said pin, and a spring, or its stated equivalent, for throwing the pawl-lever forwardly to rotate the cloth-beam, substantially as set forth.

2. The combination, with the frame, a cloth-beam, a breast-beam at the upper end of the front side of the frame, and the reciprocating lay provided with a pin, of a roller journaled on the frame between the lay and breast-beam and provided with a ratchet I, a lever K, provided with a pawl engaging the said ratchet, and a spring, or its stated equivalent, for throwing the lever, the lower end of said lever extending downwardly behind the pin on the lay, a second roller over which the cloth passes from the first roller and from which the fabric passes to the cloth-beam, a lever K', having a pawl engaging the ratchet on the cloth-beam, an operating-spring, or its equivalent therefor, and a rod pivoted to the lay and extending rearwardly to the said lever K and having a sliding connection therewith, substantially as set forth.

3. The combination, with a cloth-beam O, provided with a ratchet I', the lever K', having a pawl engaging said ratchet, the spring L', a breast-beam G, and the lay E, of the roller H, journaled in the frame in front of the lay and provided with a ratchet I, the lever K, having a pawl engaging the said ratchet, the spring L, a bar P, slotted at its rear end, a pin projecting from lever K' through said slot, a pin E², pivotally connecting the forward end of the bar to the lay and projecting beyond the lay in front of the lower end of the lever K to retract it in the rearward movement of the lay, the pivoted arms N', the roller N, journaled therein parallel with roller H, and a spring pressing the roller N toward roller H, substantially as set forth.

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Witnesses:

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