

**No. 621,538.**

**Patented Mar. 21, 1899.**

**O. L. OWEN.**

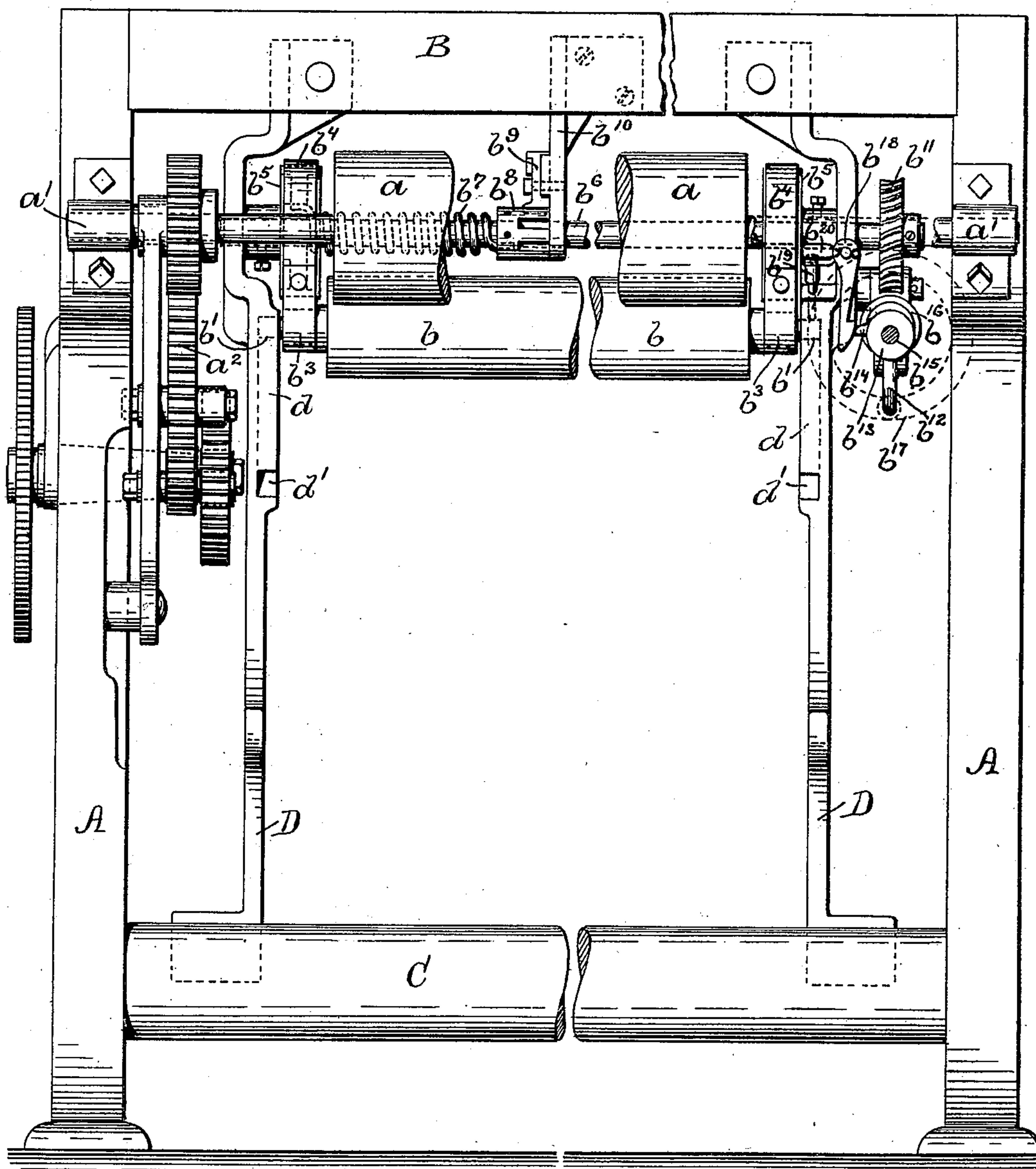
## TAKE-UP MECHANISM FOR LOOMS.

(Application filed Nov. 17, 1898.)

(No Model.)

**2 Sheets—Sheet 1.**

Fig. 1.



**WITNESSES:**

Chas. H. Luther, Jr.  
D. M. Simme.

# INVENTOR:

Oscar L. Owen  
by Joseph A. Miller & Co.  
Attys.

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2 Sheets—Sheet 2.

Fig. 2.

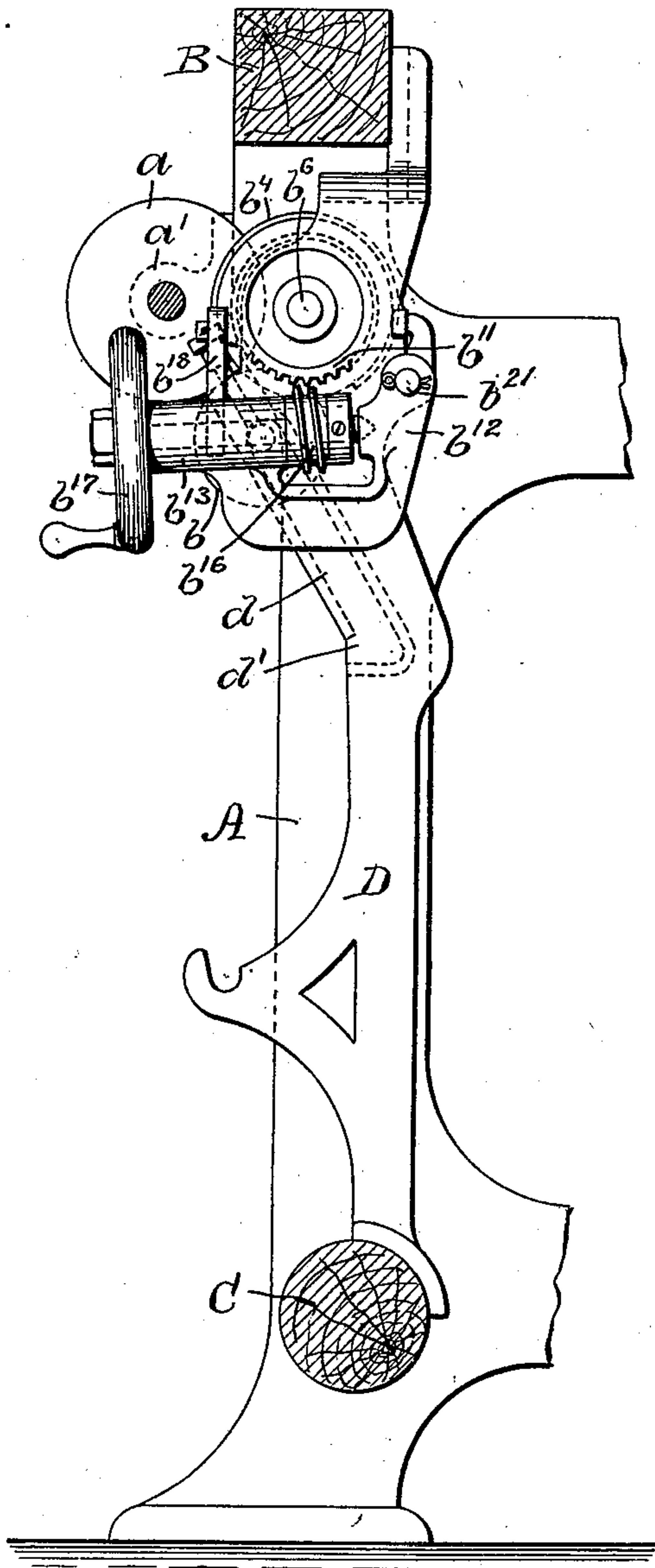


Fig. 3.

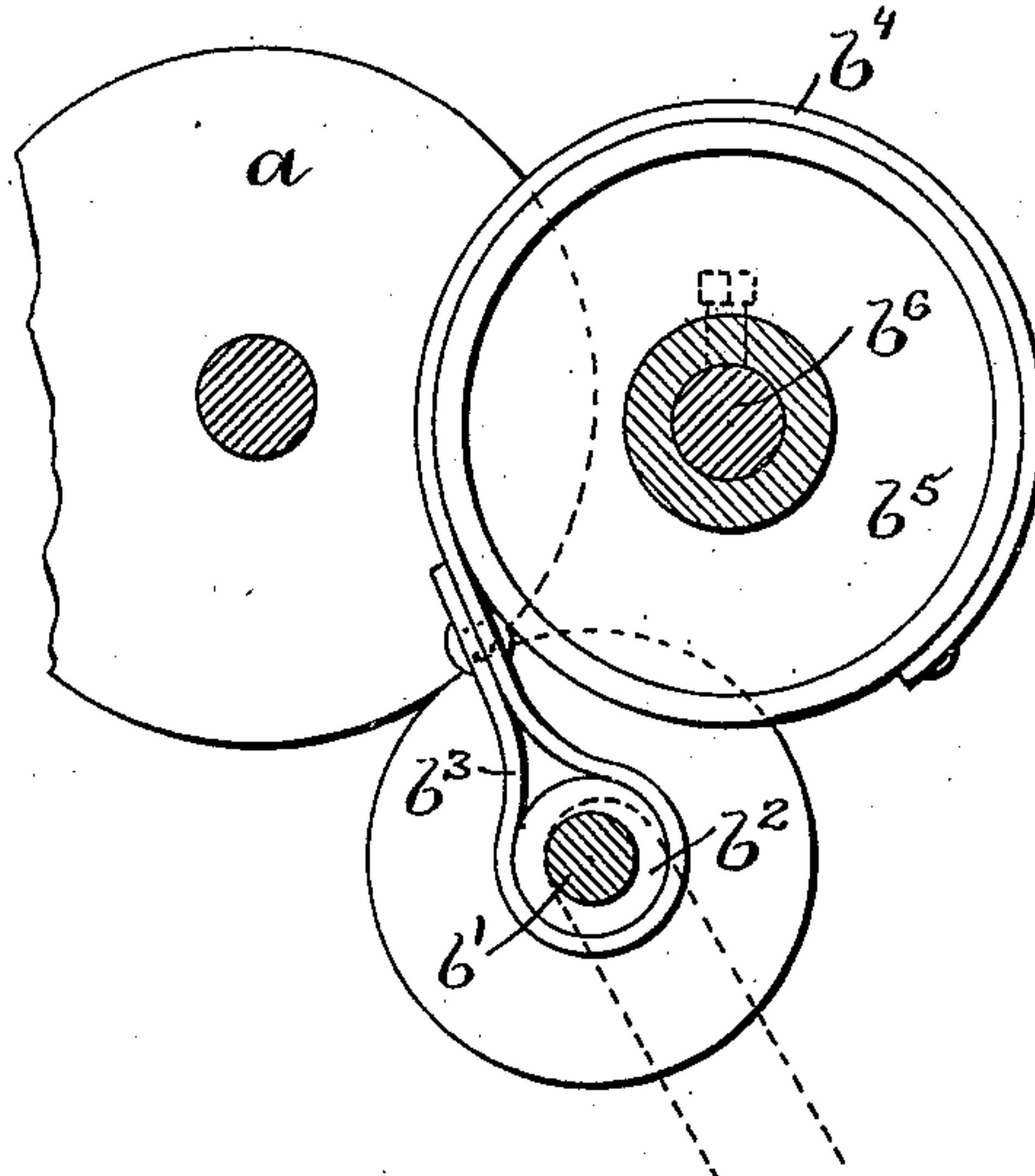
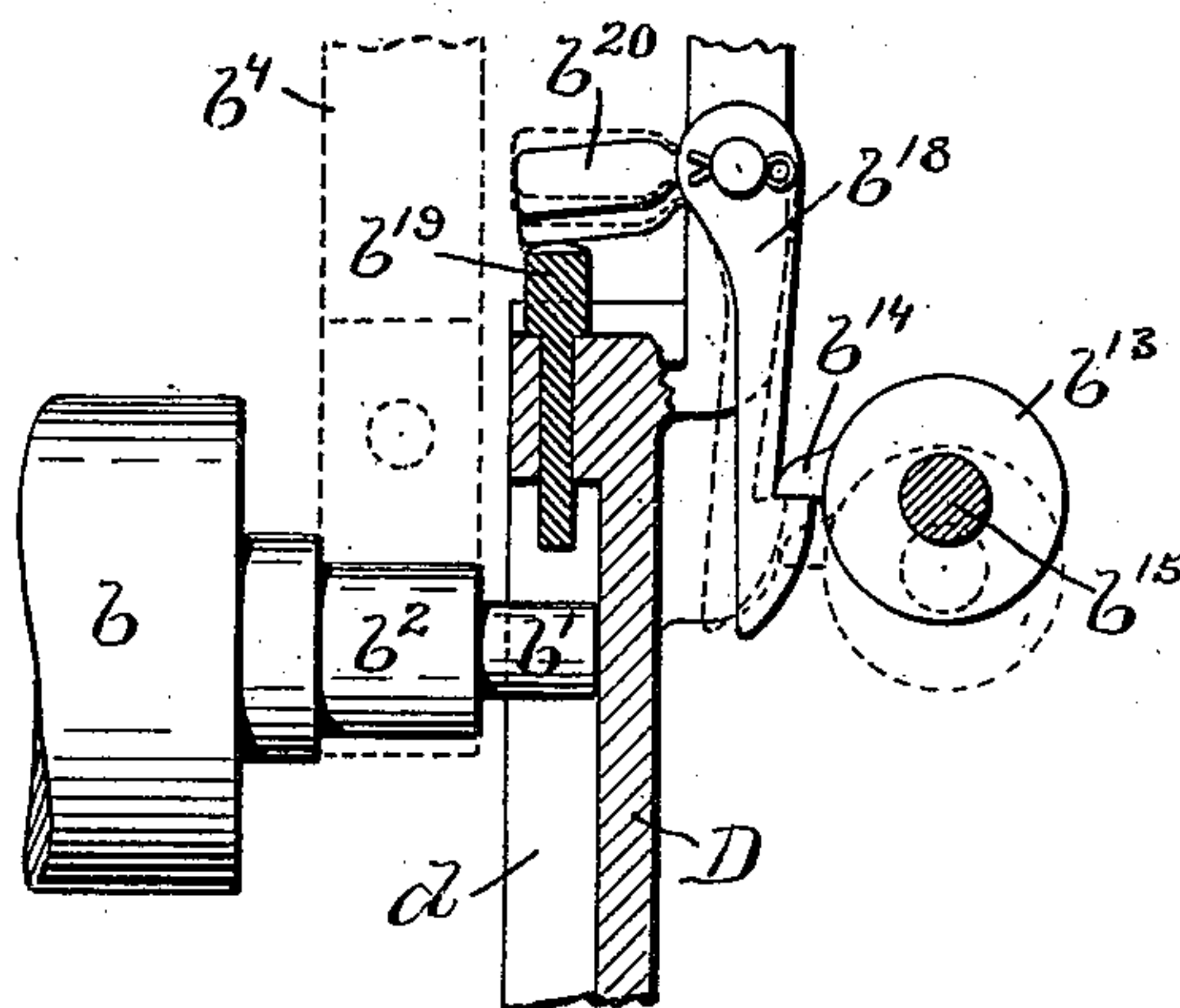


Fig. 4.



WITNESSES:

Chas. H. Luther Jr.  
B. M. Simon

INVENTOR:

Oscar L. Owen  
by Joseph A. Miller & Co.  
Attys.



# UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS.

## TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 621,538, dated March 21, 1899.

Application filed November 17, 1898. Serial No. 696,672. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR L. OWEN, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain  
5 new and useful Improvements in Take-Up Mechanism for Looms; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part  
10 of this specification.

This invention has reference to an improvement in the take-up mechanism for looms whereby the cloth is wound up as it is woven.

The invention consists in the peculiar and  
15 novel construction and combination of parts by which the cloth-roll is held against the sand-roll by straps connected with pulleys secured to a shaft acting against the torsional resistance of a coiled spring, as will be  
20 more fully set forth hereinafter.

Figure 1 is a front view of parts of a loom, the central portions being broken out so as to more clearly show the essential parts of the mechanism. Fig. 2 is a vertical sectional  
25 view of the front end of a loom provided with my improved take-up mechanism. Fig. 3 is a skeleton view showing the ends of the sand-roll, the cloth-roll, and the strap-pulley in their relative positions. Fig. 4 is a front view,  
30 partly in section, of one end of the cloth-roll, showing the stop and knock-off device controlling the torsional-spring shaft.

In the drawings, A A indicate the side frames of a loom; B, the breast-beam; C, the  
35 front girth connecting the side frames; D D, standards extending from the front girth to the breast-beam; a, the sand-roll, the shaft of which is supported in the bearings a' a' and operated through the train of gears c<sup>2</sup>, usually by a pawl-and-ratchet device actuated  
40 by the lay or the lay-sword; b, the cloth-roll. The ends of the shaft b' of the cloth-roll extend into the inclined ways d in the standards D D. The lower ends of the ways d are  
45 open at d' d', as shown in Fig. 1, to facilitate the insertion and removal of the cloth-roll.

The parts so far described are the usual parts of the take-up motion of a loom. They may be constructed in any suitable and  
50 usual manner by which the sand-roll is op-

erated to control the winding of the cloth on the cloth-roll.

To hold the cloth-roll firmly against the sand-roll by a yielding spring-pressure, to facilitate the removal of the filled cloth-roll  
55 and the insertion of an empty roll are the objects of this invention.

On the shaft b' of the cloth-roll, near the ends, I place the rings b<sup>2</sup> b<sup>2</sup>, and around these I secure the loops b<sup>3</sup> b<sup>3</sup> of the straps b<sup>4</sup> b<sup>4</sup>,  
60 preferably of leather, and secure the other ends of the straps to the strap-pulleys b<sup>5</sup> b<sup>5</sup>, secured to the shaft b<sup>6</sup>, journaled in suitable bearings, preferably supported by the standards D D. The torsional spring b<sup>7</sup> is coiled  
65 around the shaft b. One end of the coiled spring b<sup>7</sup> is secured to one of the strap-pulleys b<sup>5</sup> and the other end is secured in the sleeve b<sup>8</sup>, which sleeve is loose on the shaft  
70 b<sup>6</sup> and is provided with pawl-seats, in which the pawl b<sup>9</sup> enters to hold the sleeve against rotation. The pawl b<sup>9</sup> is supported on the bracket b<sup>10</sup>, and the sleeve b<sup>8</sup> is provided with  
75 holes for the insertion of a rod, so that the sleeve may be turned on the shaft b<sup>6</sup> to adjust the tension of the coiled spring and be held in the adjusted position by the pawl b<sup>9</sup>.

As the cloth-roll b is built up and increases in diameter by the winding on of the cloth  
80 the ends of the shaft b' move down in the ways d until, when the cloth-roll is completed, the ends of the shaft b' are at or near the openings d' d', while the tension of the spring b<sup>7</sup> has been increased with the increase of the diameter and the weight of the cloth-roll.  
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To remove the cloth-roll and replace it with an empty one, I place on the shaft b<sup>6</sup> the worm-wheel b<sup>11</sup> and pivotally support the  
90 swinging bracket b<sup>12</sup> on the stud b<sup>21</sup>, secured to the standard D. The front part of the swinging bracket b<sup>12</sup> has the shaft-bearing b<sup>13</sup> formed integral therewith and provided on one side with the projecting pawl b<sup>14</sup>. The shaft b<sup>15</sup> is journaled in the bearing b<sup>13</sup>, the  
95 worm b<sup>16</sup> is secured to the shaft b<sup>15</sup>, and the crank-disk b<sup>17</sup> is secured on the outer end of the shaft b<sup>15</sup>. The bell-crank pawl-lever b<sup>18</sup> is pivoted to the standard D, and in the standard D at the upper end of the way d is supported the headed pin b<sup>19</sup>.  
100



When the cloth-roll is completed and a new roll is to be substituted, the front of the bracket  $b^{12}$  is raised until the pawl  $b^{14}$  bears on the projection of the bell-crank pawl-lever  $b^{18}$ , the weighted arm  $b^{20}$  of which insures the engagement. The worm  $b^{16}$  is now in engagement with the worm-wheel  $b^{11}$ . By turning the crank-disk  $b^{17}$  the worm will turn the worm-wheel, the shaft  $b^6$ , and the strap-pulleys  $b^5 b^5$  to allow the cloth-roll to descend and the ends of the shaft  $b'$  to pass down and out of the openings  $d'$  of the ways  $d$ . The ends of the shaft  $b'$  of the cloth-roll are now drawn out of the rings  $b^2$ . The ends of the shaft of the new cloth-roll are inserted into the rings  $b^2 b^2$  and into the ways  $d$ . The crank-disk  $b^{17}$  is now turned in the opposite direction, turning, through the worm and worm-wheel, the shaft  $b^6$  and the strap-pulleys  $b^5 b^5$  to wind on the straps  $b^4 b^4$ , thereby raising the cloth-roll up when the end of the cloth is secured against the sand-roll. As the shaft  $b^6$  is locked and cannot turn as long as the worm  $b^{16}$  is engaged with the worm-wheel  $b^{11}$ , to secure the prompt release of the worm from the worm-wheel the pin  $b^{19}$  is arranged to be lifted by the end of the shaft  $b'$  and, acting on the arm of  $b^{20}$  of the bell-crank pawl-lever, to disengage the front of the swinging bracket  $b^{12}$  by swinging the bell-crank pawl-lever  $b^{18}$  into the position shown in broken lines in Fig. 4, thereby releasing the worm  $b^{16}$  from engagement with the worm-wheel.

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

1. In a take-up mechanism for looms, the combination with the sand-roll, the mechanism actuating the sand-roll, the cloth-roll, and the guides controlling the shaft of the cloth-roll, of a shaft, strap-pulleys secured to the shaft, a torsional coiled spring connected at one end with the shaft and at the other end with a fixed part of the loom, and straps secured to the strap-pulleys and supporting the shaft of the cloth-roll; whereby the cloth-roll is held to the sand-roll and its weight is supported by the torsional resistance of the coiled spring, as described.

2. In a take-up mechanism, the combination with the sand-roll, the mechanism controlling the rotation of the sand-roll, the cloth-roll, and the guides, open at their lower ends, controlling the descent of the shaft of the cloth-roll, of a spring-controlled shaft, strap-pulleys on the shaft, and flexible supports for the shaft of the cloth-roll secured to

the strap-pulleys; whereby the weight of the cloth-roll is yieldingly supported by the spring-controlled shaft, as described.

3. In a cloth-roll support of a loom, inclined ways controlling the movement of the cloth-roll, the cloth-roll, the shaft of the cloth-roll, rings forming the journal-supports of the cloth-roll, a shaft, a spring coiled around the shaft connected with the shaft at one end and adjustably fixed at the other end, strap-pulleys on the shaft, and straps connected with the ring-journals and with the strap-pulleys, as described.

4. In a take-up mechanism for looms, the combination of the following instrumentalities: a sand-roll, actuating mechanism controlling the rotation of the sand-roll, a cloth-roll, guides controlling the direction of the movement of the cloth-roll, a spring-controlled shaft, straps connected with the journals of the cloth-roll and the spring-controlled shaft, a worm-wheel on the spring-controlled shaft, a swinging frame, and a pawl-latch engaging with the swinging frame; whereby the worm is held in engagement with the worm-wheel and the cloth-roll may be raised, or lowered, substantially as described.

5. In a take-up mechanism for looms, the combination with the standards  $D$ , the ways  $d$ , and the bracket  $b^{10}$ , of the shaft  $b^6$ , the strap-pulleys  $b^5 b^5$ , the coiled spring  $b^7$  one end connected with the shaft and the other with a sleeve, the sleeve  $b^8$ , pawl-seats in the sleeve, the pawl  $b^9$ , and means for turning the sleeve to regulate the tension of the spring  $b^7$  and the straps  $b^4 b^4$  connected with the shaft of the cloth-roll and the strap-pulleys, as described.

6. In a take-up mechanism for looms, the combination with the spring-controlled shaft  $b^6$ , the strap-pulleys  $b^5 b^5$  secured to the shaft  $b^6$ , and the straps  $b^4 b^4$  forming the support of the cloth-roll  $b$ , of the worm-wheel  $b^{11}$  secured to the shaft  $b^6$ , the swinging bracket  $b^{12}$ , the shaft  $b^{15}$  journaled in the swinging bracket, the worm  $b^{16}$ , and the crank-disk  $b^{17}$  on the shaft  $b^{15}$ , the pawl  $b^{14}$  on the swinging frame, the bell-crank pawl-lever  $b^{18}$ , and the pin  $b^{19}$ ; whereby, when a new cloth-roll is raised to its operative position, the worm  $b^{16}$  is automatically disconnected from the worm-wheel, as described.

In witness whereof I have hereunto set my hand.

OSCAR L. OWEN.

Witnesses:

GEO. B. HAMBLIN,  
ALLISON P. BALL.