No. 638,937. Patented Dec. 12, 1899.

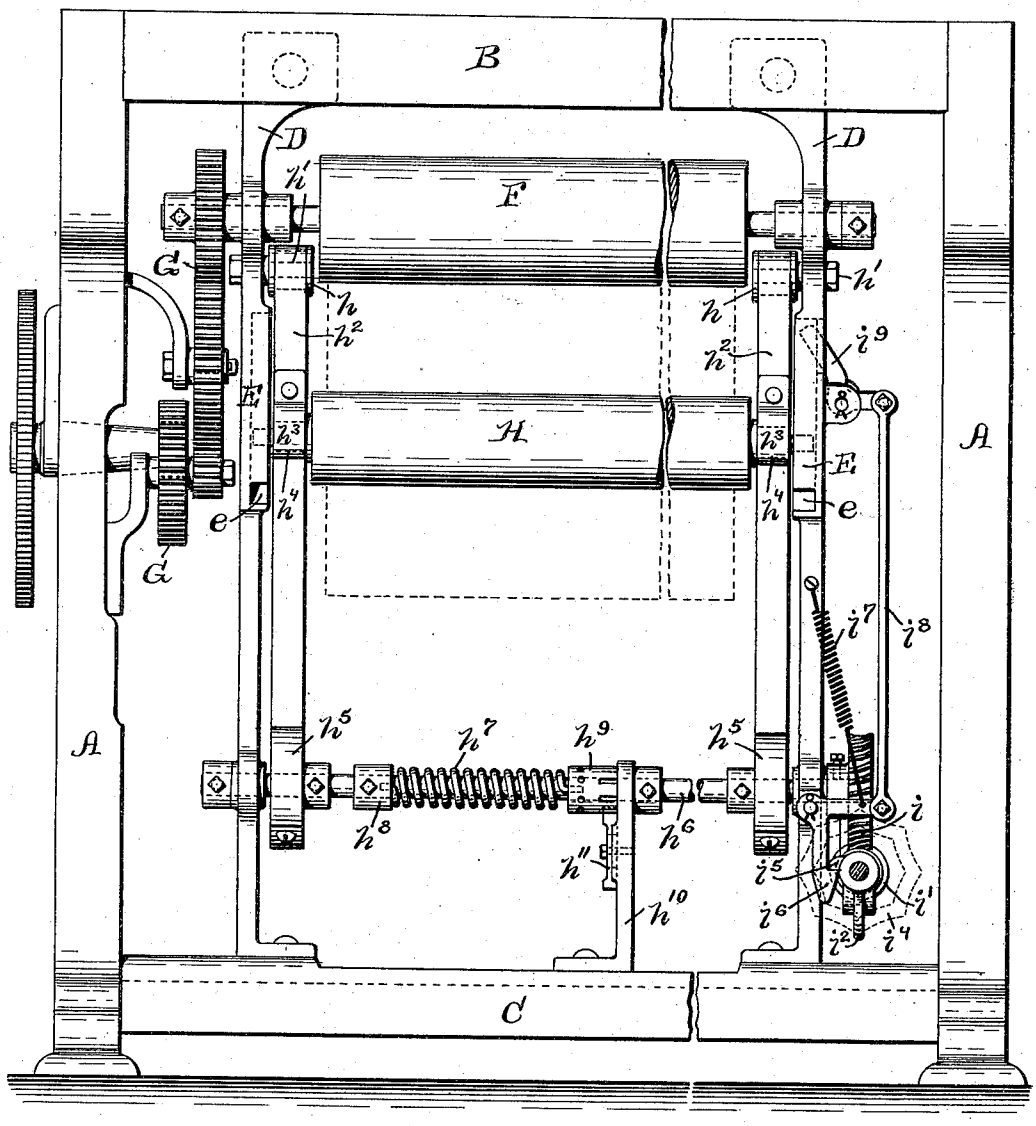
O. L. OWEN.

TAKE-UP MECHANISM FOR LOOMS.

(Application filed May 4, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



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Fig. 2.

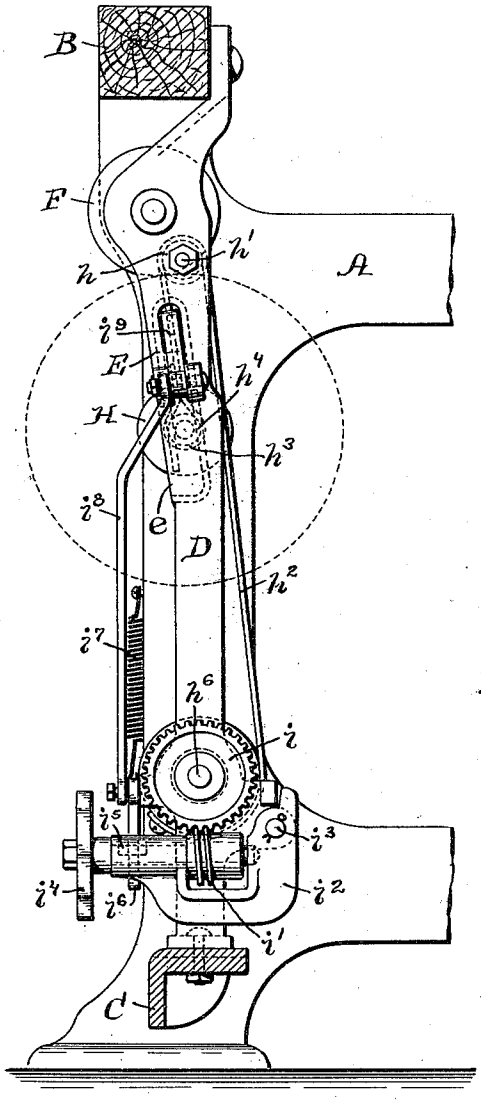


Fig. 3.

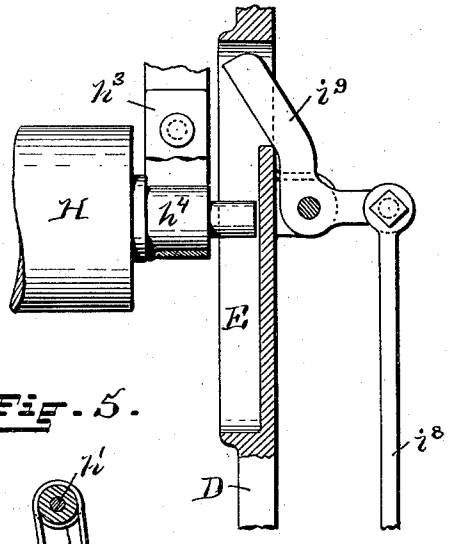


Fig. 5.

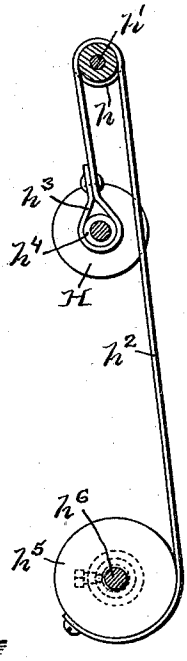
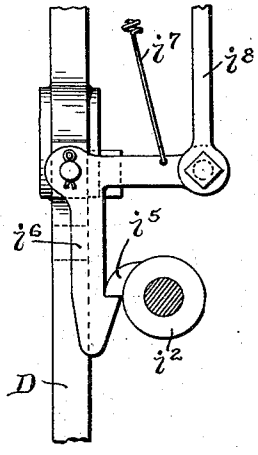


Fig. 4.



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UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, INCORPORATED, OF SAME PLACE.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 638,937, dated December 12, 1899.

Application filed May 4, 1899. Serial No. 715,509. (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 a certain new and useful Improvement 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 of this specification.

This invention has reference to an improvement in the mechanism for taking up the cloth as it is woven and winding it on the cloth-roll.

In weaving it is desirable that the attendant approach the front of the loom as closely as possible to secure a good view of the condition of the warp and of the cloth as it is woven. It is therefore desirable to place the sand-roll and the cloth-roll as much as possible under the breast-beam. To secure the close winding of the cloth and the proper stretch of the same over the breast-beam, the cloth-roll should be held to the sand-roll with a firm pressure, gradually increasing with the diameter of the cloth-roll.

The object of my present invention is to secure these results.

The invention consists in the peculiar and novel construction and combination of parts by which the sand-roll and the cloth-roll are supported below the breast-beam and the cloth-roll is pressed against the sand-roll by the torsional resistance of a coiled spring, as will be more fully set forth hereinafter.

Figure 1 is a front view of a loom, the central portion being broken out to more clearly show, on a larger scale, the operative parts of the mechanism, the cloth-roll being shown in the position when the cloth is wound on the same, as indicated in broken lines. Fig. 2 is a vertical sectional view of the front part of a loom, showing my improved take-up mechanism. Fig. 3 is a skeleton view showing one end of the cloth-roll and the worm-detaching mechanism. Fig. 4 is a skeleton view showing the lower part of the worm-detaching mechanism. Fig. 5 is a skeleton view showing the strap connection between the cloth-roll and the torsion-shaft by which the cloth-roll is held against the sand-roll.

Similar marks of reference indicate corresponding parts in all the figures.

In the drawings, A A indicate the side frames of the loom; B, the breast-beam; C, the girth connecting the side frames; D D, standards extending from the girth C to the breast-beam B; E E, guideways in the standards D D; F, the sand-roll, and G G gearing for operating the sand-roll. These gearings G G indicate the usual mechanism for operating the sand-roll by which intermittent motion is transmitted, usually from the lay-swords, to the shaft of the sand-roll. H is the cloth-roll.

The sand-roll F is journaled at its opposite ends in the standards D. Below the shaft of the sand-roll two collars h are supported on two studs h', projecting inwardly from and secured to the standards D. The straps h^2 h^2 extend over the collars h h, one end of the straps forming loops h^3, surrounding the collars h^4 h^4, in which the ends of the shaft on the cloth-roll are supported and extend beyond the collars h^4 into the guideways E. The other ends of the straps h^2 are secured to the disks h^5 h^5, and these disks are secured to the torsion-shaft h^6, supported in bearings near the lower end of the standards D D. The coiled spring h^7 surrounds the torsion-shaft h^6, one end of the coiled spring being secured in the collar h^8, which is secured to and turns with the torsion-shaft h^6. The other end of the coiled spring h^7 is secured to the sleeve h^9, loose on the torsion-shaft h^6 and provided with locking-notches. One end of the sleeve h^9 bears against the bracket h^{10}, through which the shaft h^6 extends, and which bracket is secured to the girth C. The pawl h^{11} is pivoted on the bracket h^{10} and engages with the notches on the sleeve h^9, so that the tension of the coiled spring h^7 may be adjusted and act to rotate the torsion-shaft h^6. The worm-wheel i is secured to the end of the torsion-shaft h^6. The worm i' is journaled in the bracket i^2, pivotally connected by the stud i^3 with one of the standards D. The worm i' is provided with the hand-wheel i^4 or a similar device for turning the worm. The portion of the bracket i^2 forming the journal-bearing for the worm i' is provided with the cam-pawl i^5. The bracket i^2, with the worm

i', and the hand-wheel i^4 may be swung into engagement with the worm-wheel i or allowed to drop out of engagement with the same. When engaged, the cam-pawl i^5 rests on the shoulder of the bell-crank lever i^6 and is supported by the coiled spring i^7, one end of which is secured to the bell-crank and the other end to the standard D. The rod i^8 connects the bell-crank lever i^6 with the pawl i^9, pivotally secured to the standard D, so that the pawl enters the guideway E.

When a cloth-roll is to be inserted, the collars h^4 are placed over the shaft of the cloth-roll H. The projecting ends of the shaft are then passed into the openings $e\,e$ of the guideways E. The worm e' is now turned to operate the worm-wheel i and by it the torsion-shaft h^6 and with the same the disks h^5, so as to wind up the straps h^2 and raise the cloth-roll nearly up to the sand-roll. The end of the cloth is now passed around the cloth-roll H, and by again turning the worm i' the cloth-roll is forced against the sand-roll and one end of the shaft of the cloth-roll comes in contact with the pawl i^9, moving the pawl outward and disengaging the hook of the bell-crank lever i^6 from the cam-pawl i^5, which allows the bracket i^2, carrying the worm, to drop out of engagement with the worm. The loom being now running operates through the gears G G or a similar driving mechanism and the sand-roll F and, continuing to weave the cloth, winds the same, by the surface contact of the sand-roll with the cloth, onto the cloth-roll. The coiled spring h^7 on the torsion-shaft h^6 acts, through the disks h^5 and the straps h^2, to hold the cloth-roll against the sand-roll until the desired cut of cloth is completed, when the cloth-roll, with the cloth, is removed and another cloth-roll substituted. By this construction the front of the loom can be readily approached by the attendant, the sand-roll and the cloth-roll projecting but little beyond the front of the breast-beam. The adjustment of the coiled spring can be at all times readily made to secure the proper pressure of the cloth-roll against the sand-roll, as all the parts are in plain sight and readily accessible.

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

In a loom, the combination with the sand-roll and mechanism for operating the same, of the guideways E E below the sand-roll and forming the paths for the shaft of the cloth-roll, the cloth-roll H, the collars h^4 on the cloth-roll, the collars $h\ h$ supported on studs below the shaft of the sand-roll, the torsion-shaft h^6, the coiled spring h^7, means for adjusting the tension of the coiled spring, the disks $h^5\ h^5$ secured to the torsion-shaft h^6, the straps $h^2\ h^2$ connected with the disks $h^5\ h^5$ and formed at the opposite end with the loops h^3 h^3 supporting the collars $h^4\ h^4$ on the shaft of the cloth-roll H, the worm-wheel i on the torsion-shaft h^6, the bracket i^2 pivotally supported on one of the standards D, the worm i' journaled in the bracket i^2, the hand-wheel i^4 secured to the worm, the cam-pawl i^5 on the bracket i^2, the bell-crank lever i^6, the coiled spring i^7 supporting the bell-crank lever, the rod i^8 connecting the bell-crank lever at the lower part of the loom with the pawl i^9 on the upper part of the loom, and the pawl i^9 extending into the upper end of the guideway E; whereby the cloth-roll is supported by straps connected with the torsional, spring-controlled shaft and when raised into position by the worm and worm-wheel, automatically disconnects the worm from the worm-wheel so that the sand-roll may operate the cloth-roll when the loom is started, as described.

In witness whereof I have hereunto set my hand.

OSCAR L. OWEN.

Witnesses:
B. M. SIMMS,
J. A. MILLER, Jr.