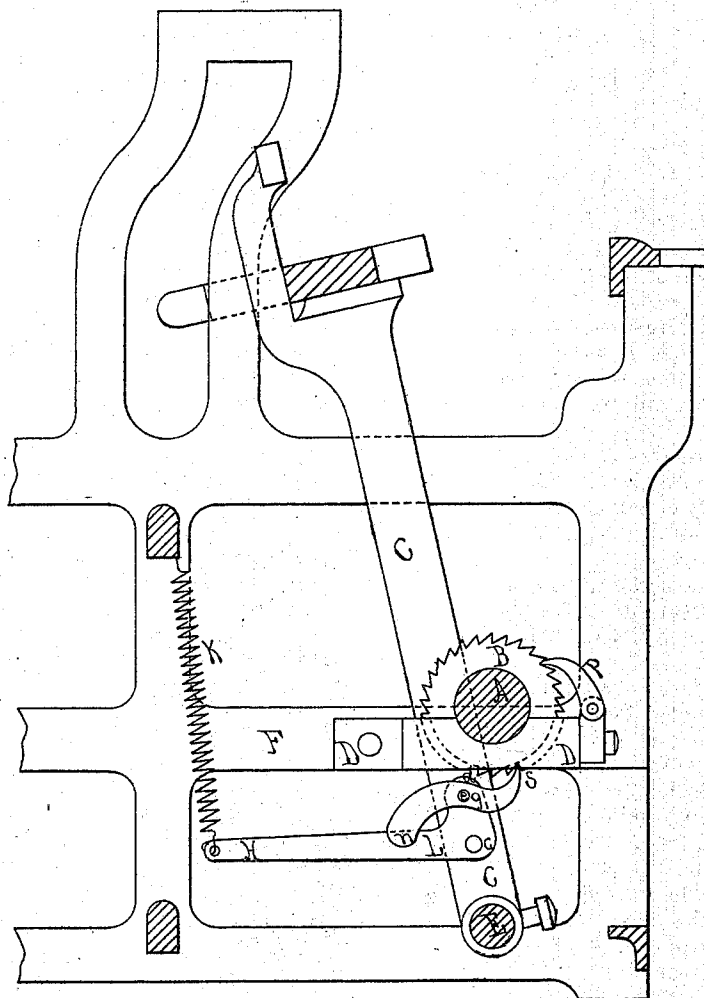


W. MURKLAND.

Take-up Mechanisms for Looms.

No. 146,543.

Patented Jan. 20, 1874.



Witnesses.
John E. Crane
William R. Crane.

Inventor
William Murkland

UNITED STATES PATENT OFFICE.

WILLIAM MURKLAND, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO JOSIAH GATES, OF SAME PLACE.

IMPROVEMENT IN TAKE-UP MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. **146,543**, dated January 20, 1874; application filed November 17, 1873.

To all whom it may concern:

Be it known that I, WILLIAM MURKLAND, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Take-Up for Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which I have represented a cross-section of a loom, a little inside of one end frame, with my improvement thereunto applied.

This invention relates to the cloth-winding apparatus or take-up for looms; and it consists of a peculiarly-constructed lever, L, pivoted to the sword of the lay, and carrying a counterbalance-pawl, *g*, pivoted to an ear, *d*, rising from the end of the lever, and a spring, K, for holding the rear end of the lever against the tension of the cloth when the lay moves forward.

In the said drawings, A represents the cloth-roll, having a ratchet-wheel, B, on one end, a little inside of the sword C, rising from the rocker-shaft E, and arranged to work in the usual way. The cloth-roll is supported in bearings upon an open bracket, D, projecting inward from the end frame F, leaving room between the frame and the bracket for the oscillating sword and the ratchet-wheel. At the forward side of the loom, and hung to the bracket or other support, is a pawl, P, to hold the wheel against the draft or unwinding action of the cloth on the roll. In practice, the pawl P is generally in two parts—that is, a long and a short pawl—to catch and hold on the distance of half a tooth. To the lower portion of the sword C a lever, L, of peculiar construction, is loosely pivoted at *c*. An ear or projection, *d*, rises above the pivoted end of the lever, and to this ear a counterbalance-pawl, *g*, is hung near its center by an easy-working joint or a pivot, *e*, the outer end being the heaviest, to hold the catch end S in contact with the teeth of the wheel B. The arm H of the lever extends rearward, as shown, and a spring, K, is attached to its end and to some fixed object or part of the frame. The backward and forward motions of the sword impart the same motions to the lever L and the pawl *g*, causing the latter to engage with the teeth of the wheel, and when the cloth is slackened

by the introduction of filling in the web, and by the action of the let-off mechanism, the pawl *g* turns the wheel and the roll, and winds up the cloth as fast as it is woven. During the weaving and cloth-winding or take-up process there are intervals of time when there is no slack to be taken up, and the tension on the cloth, as the lay beats up, is regulated by the spring K. At such times, when the forward motion of the sword brings the catch end of the pawl into contact with a tooth of the wheel, instead of turning the latter, the yielding action of the spring K allows the forward pressing force of the pawl to react against the ear *d*, and force the rear end H of the lever downward, one, two, or more times in succession, as the sword oscillates, but a little less distance each time, until the woven-in filling and the action of the let-off mechanism so slacken the cloth that the tension of the spring will overcome the tension of the slackened cloth, when the pawl will turn the wheel and the roll, and wind up the cloth, as before described.

The desired tension of the cloth is regulated by the tension of the spring, which should be adjustable, so that its top end may be secured at a point higher on the fixed support to increase its effective power, and lower to diminish it.

I regard the lever L and the pawl and spring K a new and very useful means for operating the cloth-roll by a ratchet-wheel, as also for regulating and controlling the tension of the cloth, whether the action of the let-off mechanism be regular and uniform or irregular, as the yielding action of the spring and the consequent described action of the lever and pawl render the apparatus capable of accommodating itself to the action of any common let-off mechanism.

I claim as my invention—

The lever L, pawl *g*, and spring K, in combination with, and operating and ceasing to operate, the ratchet-wheel B and the cloth-roll, substantially in the manner and for the purpose described.

WILLIAM MURKLAND.

Witnesses:

JOHN E. CRANE,
WILLIAM R. CRANE.