J. TURNER.

Let-Off Mechanism for Looms.

No. 161,996. Patented April 13, 1875.

Fig. 1

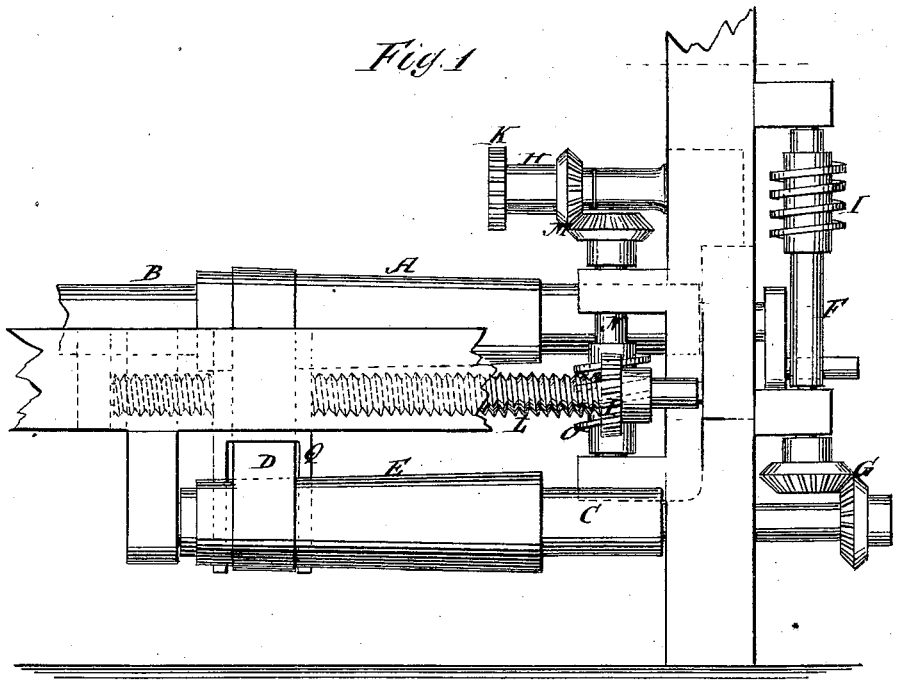
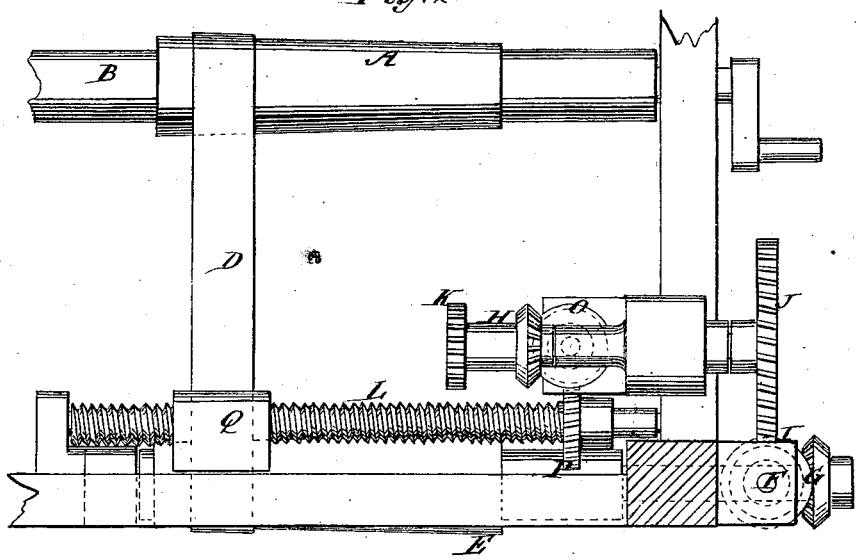


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN TURNER, OF LONSDALE, RHODE ISLAND.

IMPROVEMENT IN LET-OFF MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. **161,996**, dated April 13, 1875; application filed October 24, 1874.

To all whom it may concern:

Be it known that I, JOHN TURNER, of Lonsdale, in the county of Providence and State of Rhode Island, have invented a new and Improved Let-Off Mechanism for Looms, of which the following is a specification:

My invention consists of the yarn-beam, geared by a system of reducing-gears, and a pair of long cone-pulleys and belt, with the cam-shaft of the loom, with which there is a long, slowly-revolving screw, which gradually shifts the belt to increase the speed of the yarn-beam in the proportion of the reduction of the size of the yarn-roll, thus constituting a positive graduated let-off. For varying the delivery, to make the cloth more or less close, wheels of different sizes may be put in the reducing-train; for instance, the wheel on the yarn-beam, and the one gearing with it, may be removed and others put in their places.

Figure 1 is a side elevation of a portion of a loom, showing the application of my improved let-off mechanism; and Fig. 2 is a horizontal section on the line *x x* of Fig. 1, showing the mechanism in top view.

Similar letters of reference indicate corresponding parts.

A is a long cone on the cam-shaft B, which drives a counter-shaft, C, by the belt D and the reverse cone E. This shaft C turns a vertical shaft, F, by the bevel-wheels G. The shaft F turns another shaft, H, by its worm I and the worm-wheel J. The shaft H carries a wheel, K, which gears into a wheel on the yarn-beam, (not shown,) to turn it for letting off the yarn. This shaft also turns the screw L by the bevel-wheels M, shaft N, worm O, and worm-wheel P, to shift the belt along the cones very slowly, to increase the speed as the size of the yarn-roll diminishes. Q is the shifter, by which the screw moves the belt along the pulleys. At the beginning, when the yarn-roll is full, the belt and belt-shifter will be shifted to the small end of the cone A, to be worked gradually toward the large end as the work progresses, so that the speed of the yarn-roll will increase as the size diminishes, and thus equalize the delivery. To adapt the mechanism for making cloth of different degrees of closeness, interchangeable wheels of different sizes, or differential gears of any approved kind, may be employed at any part of the reducing-train most convenient.

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

The combination, with the belt-shifting screw L and the driving-shaft C, of the intervening shafts F H N, connected and arranged as shown and described, for the purpose specified.

Witnesses: JOHN TURNER.

LUKE DUXBURY,

GEORGE BURCHELL.