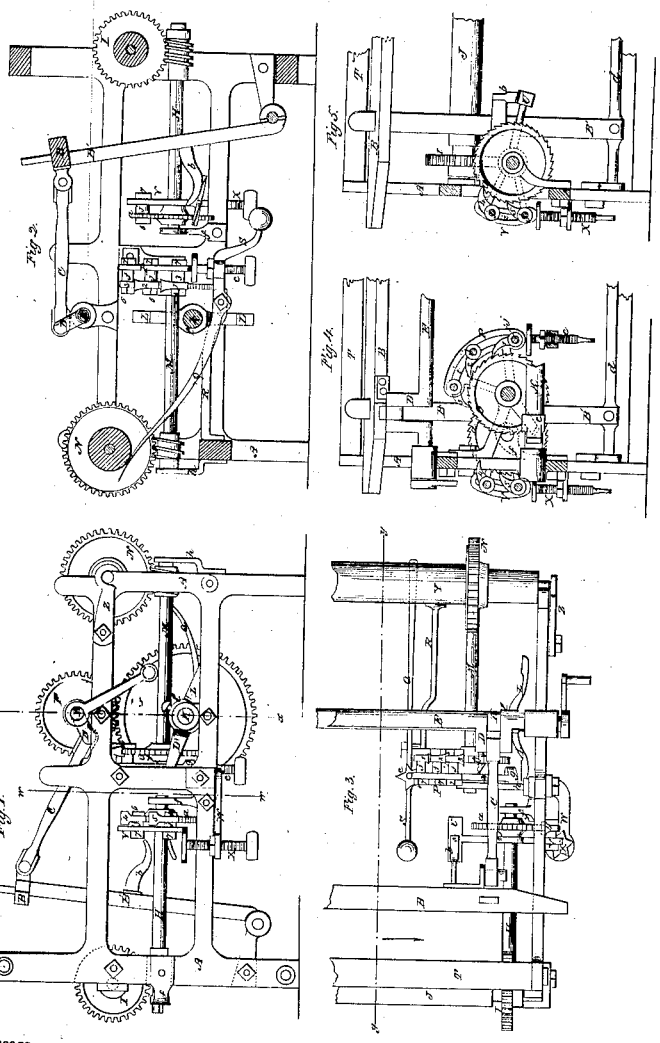
# D. Basset.

## Let-Off and Take-Up.

No. 51,003. Patented Nov. 21, 1865.

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# UNITED STATES PATENT OFFICE.

D. BASSETT, OF KILLINGLY, CONNECTICUT.

## IMPROVEMENT IN LET-OFF AND TAKE-UP MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. 51,003, dated November 21, 1865.

*To all whom it may concern:*

Be it known that I, D. BASSETT, of Killingly, in the county of Windham and State of Connecticut, have invented a new and useful Improvement in Let-Off and Take-Up Motions for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a loom to which my invention has been applied. Fig. 2 is an elevation of a transverse section, taken on the line *y* of Fig. 3, looking in the direction of the arrow. Fig. 3 is a plan of that end of the loom which contains my improvement. Fig. 4 is an elevation of a section taken on the line *x* of Fig. 1. Fig. 5 is an elevation of a section taken on the line *w* of Fig. 1.

Similar letters of reference indicate like parts.

This invention embraces several particulars, one of which relates to the use of a balanced adjustable lever resting against the yarn-beam for the purpose of governing the letting-off motion. Another relates to the manner of actuating the let-off pawl-lever by means of a revolving wiper. Another relates to the construction of the let-off and take-up levers. Another relates to actuating the take-up pawl by means of a shoe on the sword. Another relates to the mode of transmitting motion to the cloth-beam from the ratchet-wheel which is driven by the take-up pawl-lever.

A designates the frame of the loom, whose lay B is vibrated through connecting-rods C and cranks D, one set of which only is seen in the drawings, the cranks D being formed on the driving-shaft E. The gear-wheel F on one end of that shaft gears with a gear-wheel, G, on the lower shaft, K, which latter, like the main shaft, has its bearings in the sides of the frame. The shaft K has a collar, *e*, fastened to it by a set-screw, from which collar project wipers L L for operating the pawl-lever P. The wipers extend from opposite sides of the collar *i*, and by means of the set-screw they can be properly adjusted on the shaft. The journals of the yarn-beam Y rest in sockets made for them in the back part of the frame, in which they are held by hooks Z on each end of the frame, only one of them, however, being seen in the drawings. To release the yarn-beam when it is to be removed, it is only necessary to raise the hooks.

N is a gear-wheel fixed on the yarn-beam. It is engaged by a worm formed on a transverse shaft, M, which is sustained in bearings made for it in the brackets *h*. Upon the shaft M, near its inner end, is fixed a ratchet-wheel, O, which is engaged by the pawls 1 2 3 of the pawl-lever P. This pawl-lever has its fulcrum on the shaft M, between the hub of the ratchet-wheel O and the adjacent bracket *h*. The end *g* of the lever extends toward the adjacent side of the frame, so as to be in the path of rotation of the wipers L, which successively depress that end of the lever, and thereby raise the other end, which is in the form of an arc of a circle, having a curved slot, *i*, which slot receives the ends of pins *j*, which are held to the lever by nuts 7. The other ends of the pins carry pawls 1 2 3, which are held loosely thereon by means of nuts 6. The pawls can be adjusted to different positions in the slot *i*, and their distances apart are such that when one of them engages a tooth of the ratchet-wheel, the others will rest on the planes of other teeth. By this means I am enabled to move the ratchet from the impulse of the pawl-lever a less distance than the measure of one tooth. The extent of movement given to the pawl-lever P by the wipers L is determined by the adjusting-screw *c*, which passes up through the weighted end *s* of the lever Q. This lever Q is supported on a bracket, R, and it has a broad end, which passes beneath and is held up against the yarn-beam by its weighted end S. Since the adjusting-screw passes through the part S of the lever Q, it follows that when the yarn-beam is full the screw S will be raised, and as diameter of the yarn on the beam is lessened the screw will be lowered, thereby determining the height of the arm *g* of the pawl-lever. When this arm is at its lowest position, which will be when the yarn-beam is full, the wipers L remain in contact with it only a little while and move it only a little distance; but as the yarn-beam becomes less in diameter that end of the lever Q which holds up the pawl-lever gradually takes a lower position, the pawls 1 2 3 are suffered to descend in an equal degree, and the end *g*

of the pawl-lever to rise higher in the path of the wipers.

The take-up lever has a pawl-lever, V, of like construction with the pawl-lever P. The extent of its vibration is determined by an adjusting-screw, X, which works in a bracket, W, extending from the frame A. The pawls of this lever are only two in number, 4 and 5, in this example of my invention, and engage the teeth of a ratchet-wheel, *a*, fast on a transverse shaft, H, which is supported by brackets *f f*. See Fig. 1. This shaft has also a worm, which engages with a gear-wheel, I, fixed on the cloth-beam J.

The sword B′ of the lay B has a shoe, *b*, which extends inwardly so as to come over the arm U of the pawl-lever V at each inward movement of the lay. The said arm U is formed at its end into a plate which is set at an angle inclining downward toward the sword of the lay, as seen in Fig. 2.

T designates the breast-beam of the loom.

The operation of the take-up is effected by the vibrations of the lay, the shoe *b*, when the lay retires after each beat, striking the arm U and causing the pawls of the pawl-lever V to rotate the ratchet-wheel *a*, and so give rotary motion to the shaft H, whose worm will move the gear-wheel I of the cloth-beam and cause the latter to take up the woven fabric. The height of the arm U will be determined by the position given to the bearing end of the adjusting-screw X, and the extent of movements of the pawl-lever, and consequently the movement of the worm-shaft, will of course be more or less in the same proportion as the said arm is in a lower or higher position in the path of the shoe.

The pawls of the pawl-lever V may be greater in number, if desired, so as to enable the pawl-lever V to move the ratchet-wheel a distance which shall be a greater or less fractional part of the length of one tooth, as described with respect to the pawl-lever P.

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

1. The balanced lever Q with its adjustable screw for determining the extent of let-off motion to be given to the yarn-beam, constructed and operating in connection with the variable diameter of the yarn on said beam, substantially as described.

2. Actuating the let-off pawl-lever P by means of revolving wipers, substantially as described.

3. Adjusting the height of the arms U and *g*, respectively, of the pawl-levers by means of screws whose ends form rests or bearing surfaces for the heavy ends of said pawls, substantially as described.

4. Operating the pawl lever V by means of a shoe on one of the swords of the lay, substantially as described.

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Witnesses:

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