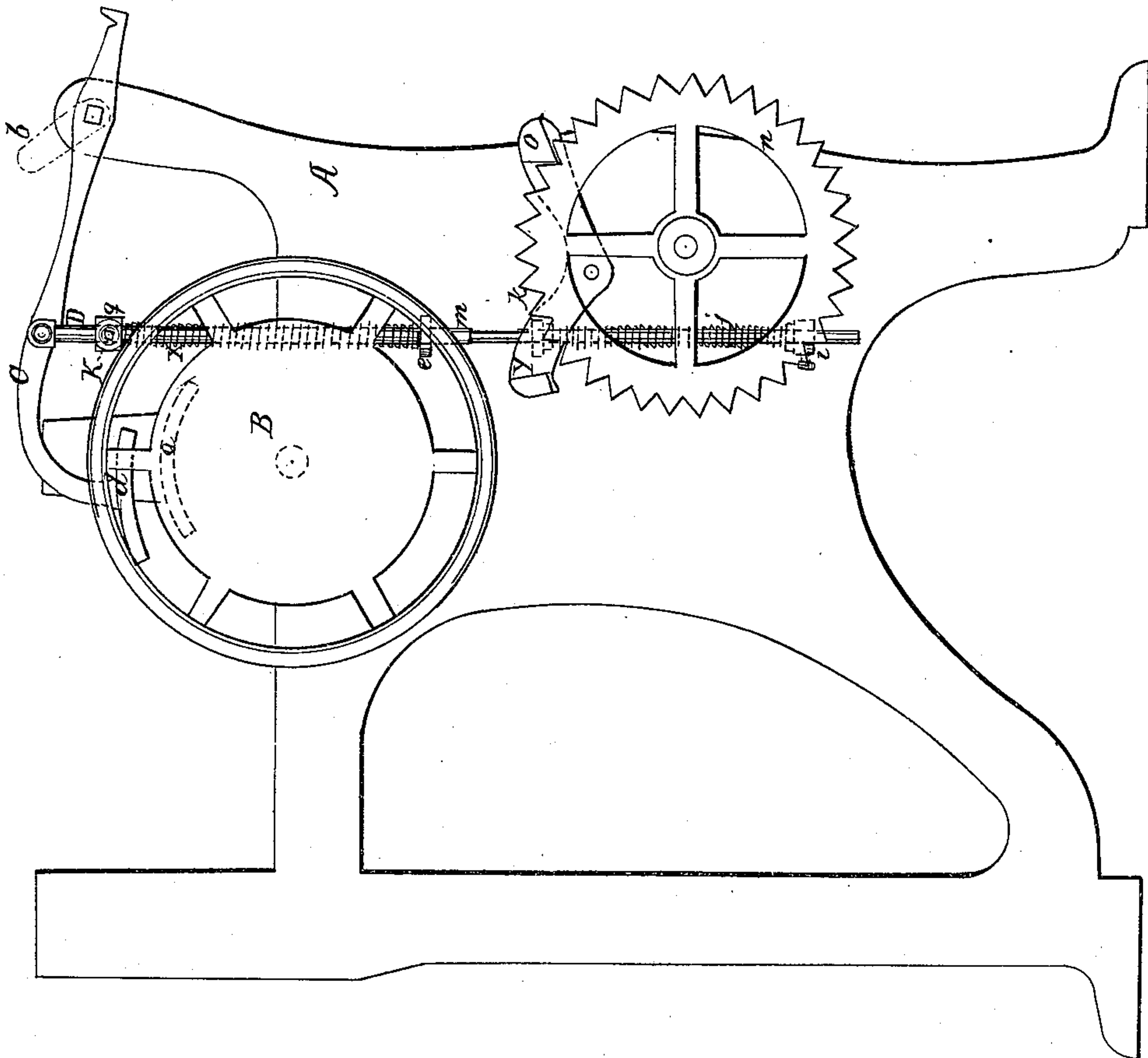


B. F. Carter
Let-Off for Loom.

N^o 81,342.

Patented Aug. 25, 1868.



Witnesses.
H. C. Ashketter
Wm. A. Morgan

Inventor
B. F. Carter
per *Murray*
attorneys

UNITED STATES PATENT OFFICE.

BENJAMIN F. CARTER, OF MANVILLE, RHODE ISLAND.

IMPROVEMENT IN LET-OFF MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. **81,342**, dated August 25, 1868.

To all whom it may concern:

Be it known that I, BENJAMIN F. CARTER, of Manville, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Let-Off Motion 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 drawing, forming part of this specification, which is a side elevation of a loom-frame, with my improved apparatus attached to the same.

Similar letters of reference indicate like parts.

The nature of my invention relates to improvements in let-off mechanism for looms, and is designed to provide means whereby the warp-yarns shall be held rigidly against the action of the lay while beating up, as is found to be highly necessary in weaving heavy goods, and at the same time permit the tension of the yarn to effect the delivery of the same after the lay has beaten up the weft, as will be more fully described.

A represents the frame of a loom; B, a balance-wheel on the crank-shaft, on the inner face of which is a cam-block, *a*. C is a lever, secured near one end to the whip-roll *b*, as shown, and near the other end to the vertical rod D. *d* is a presser-foot on the end of said lever, adjacent to the cam-wheel B. The rod D passes through a bracket, *e*, projecting from the frame.

X is a spiral spring, wound around the shaft, and bearing at its lower end on the bracket *e*. The upper end is attached to the sliding block *g* on the said rod, which is secured to the rod at any desired point by the set-screw K, the head of which sets in a socket in the said slide, to guard against the slide being surreptitiously changed in position on the rod by persons not authorized to do so, and are thereby prevented, without the use of a key suitably fitted for the purpose, which may be kept in the possession of an overseer. The said slide may be adjusted on the rod to change the tension of the spring, as desired.

On the rod D, at its lower end, is also another adjustable slide, which bears a spring, *j*, which is connected at its upper end to the bracket *k*, (shown in dotted lines,) on the escapement-lever Y.

The rod D slides through the lug *k*, and is provided with an enlarged portion, *m*, a short distance above the lug *k*, forming a shoulder thereon. *n* is an escapement-wheel on the yarn-beam.

When the lay is beating up the warp, the cam-block *a* on the wheel will be in the position shown in the drawings, and will prevent the strain of the same on the warp from turning the whip-roll, so that it cannot yield to the additional strain produced by the lay; but when the strain of the lay ceases, the cam-block will have passed beyond the presser-foot, whereby, if the tension be great enough on the yarn, the spring X will yield to the same until the shoulder *m* on the rod D strikes the lug Y on the escapement-arm, pressing it down until the lug *o* on the opposite end of the same rises sufficiently to allow the yarn-beam to give off a quantity of yarn, thereby relieving the tension of the same, when the spring X will throw the lever C and rod D up again; allowing the spring *j* to throw the escapement-lever back into another notch of the wheel.

By the use of a let-off motion, as above described, very heavy or very light goods may be made, without necessitating any change in the same, except merely changing the position of the slides *g* and *i* on the rod D, to adjust the tension of the spring.

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

1. The combination of the cam-block *a* on the wheel B, with the lever C, spring-actuated rod D, escapement-lever Y, wheel *n*, and whip-roll *b*, substantially as and for the purpose described.

2. The combination of the whip-roll *b*, lever C, rod D, springs X and *j*, escapement-lever Y, and wheel *n*, substantially as and for the purpose described.

3. In combination with the above, the slide *g*, formed with a socket for the reception of the head of the set-screw K, substantially as and for the purpose specified.

BENJAMIN F. CARTER.

Witnesses:

FRANCIS L. O'REILLY,
HERBERT F. KEITH.