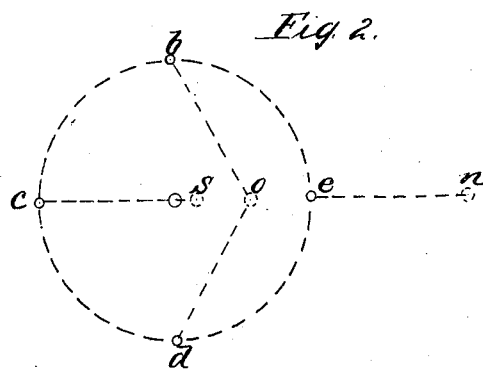
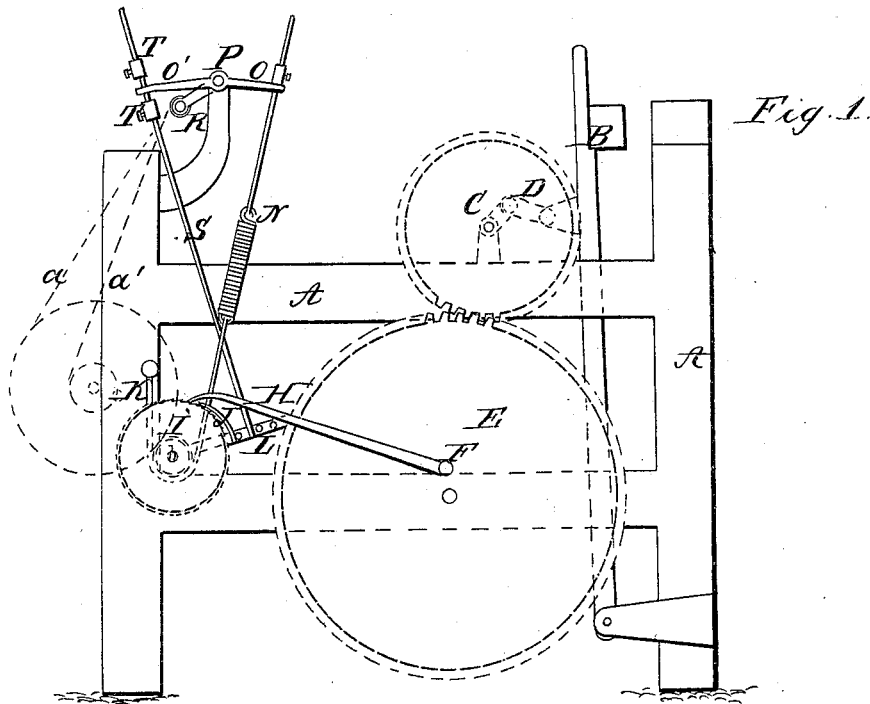


E. Wright.
Let-Off Motion.

N^o 52,780.

Patented Feb. 20, 1866.



Witnesses,
John K. Wright
James G. Arnold

Inventor;
Edward Wright

UNITED STATES PATENT OFFICE.

EDWARD WRIGHT, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN LET-OFFS FOR LOOMS.

Specification forming part of Letters Patent No. 52,780, dated February 20, 1866.

To all whom it may concern:

Be it known that I, EDWARD WRIGHT, of the city and county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Looms; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an end view of my improved loom, showing its connection to the other parts in common use. Fig. 2 shows some parts in detail, hereinafter more particularly to be described.

The object of my invention is to obtain a simple and effectual let-off for looms; and it consists in making a loose connection from the whip-roll to the regulator of the let-off, so that a little motion of the former does not affect the latter unless the warp is in such condition as to need its action, in which case it acts promptly.

A is the frame; B, the lathe; C, the crank-shaft; D, the connection between them; E, the driving-gear, with a small crank, F, carrying the pawl H, which acts on the ratchet i, to which is attached a small gear meshing into a gear on the beam-head in the common form.

J is a shoe or guard attached to the lever L, so that in raising or lowering the lever it shall increase or diminish the action of the pawl on the ratchet by causing the same, sooner or later, as the case may be, to be lifted so as to be free of the teeth. The lever L turns on the pin which supports the ratchet, and is fitted to the pin tight enough to remain in any position in which it may be placed.

K is a friction-strap, one end of which is attached or fastened in any suitable manner to the frame, and the other, after passing under or partly around a pulley attached to ratchet-wheel, is fastened, by the spring-connection N, to the arm O of the rocking shaft P. This spring serves also to give the desired strain to the whip-roll R.

The arm O' of the shaft P is connected to the lever L by the rod S, which passes through the arm, and which rod has two collars, T T, which are adjustable by means of set-screws.

R is the whip-roll hanging from the shaft

P, and so placed that as the size of the warp on the beam decreases the tension on the whip-roll increases, as shown by the lines *a* and *a'*.

The other parts of the loom may be of most any of the common forms, and therefore not necessary to be particularly described here.

The operation of the short crank and its connection, which is made little longer than the crank, is clearly shown in Fig. 2, where it will be seen that while the crank moves through *b c d* the lathe moves from *o* to *s* and back, and while the crank moves through *d e b* the lathe moves from *o* to *n* and back, thus giving more time for the shuttle to run in, and uniting together in my machine the advantage resulting from this state of rest with those resulting from the crank-motion.

As the tension of the warp increases the strain depresses the whip-roll, and the arm O rising, tightens the friction-strap, and the arm O' moves the lever L, which lowers the guard J and allows the pawl H to move the ratchet faster; and when sufficient warp is let off the slack allows the whip-roll to rise, which by a reverse action from the above restores the parts to their places. The warp bearing on the shaft P is held at nearly the same height and the collars are separated far enough to allow the whip-roll a little play, so that the slight movement of the warp in forming the shed will not affect the let-off. This obviates the nice adjustment which would otherwise be necessary and gives prompt action when needed.

I am aware that tension-rolls and cranks of various lengths have been used. These I do not claim; but

What I claim as new, and desire to secure by Letters Patent, is—

The construction and arrangement of the let-off mechanism, consisting of the pawl, ratchet, guard-lever having loose connection with the whip-roll, and the friction device, all constructed and operating substantially as described.

EDWARD WRIGHT.

Witnesses:

L. A. G. ARNOLD,
J. G. ARNOLD.