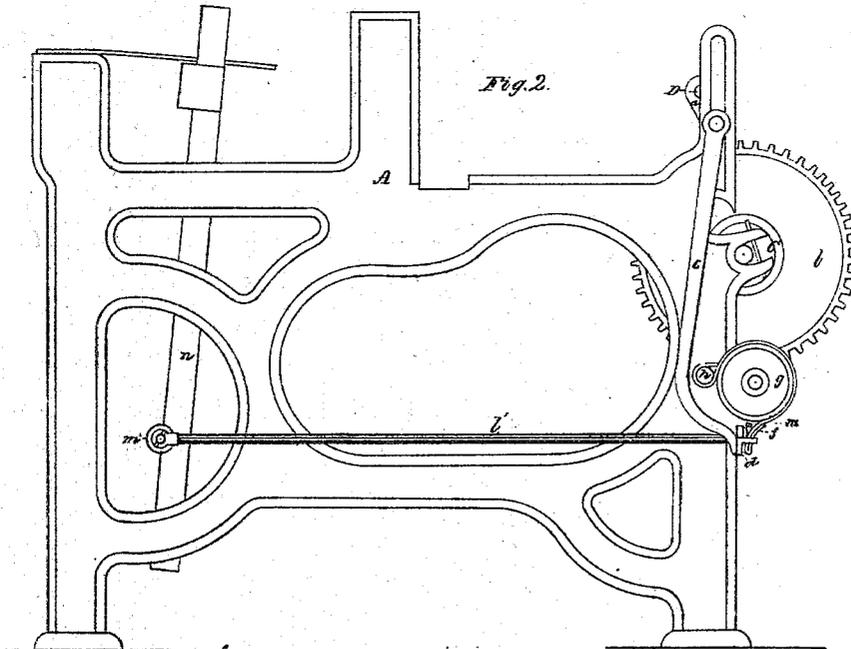
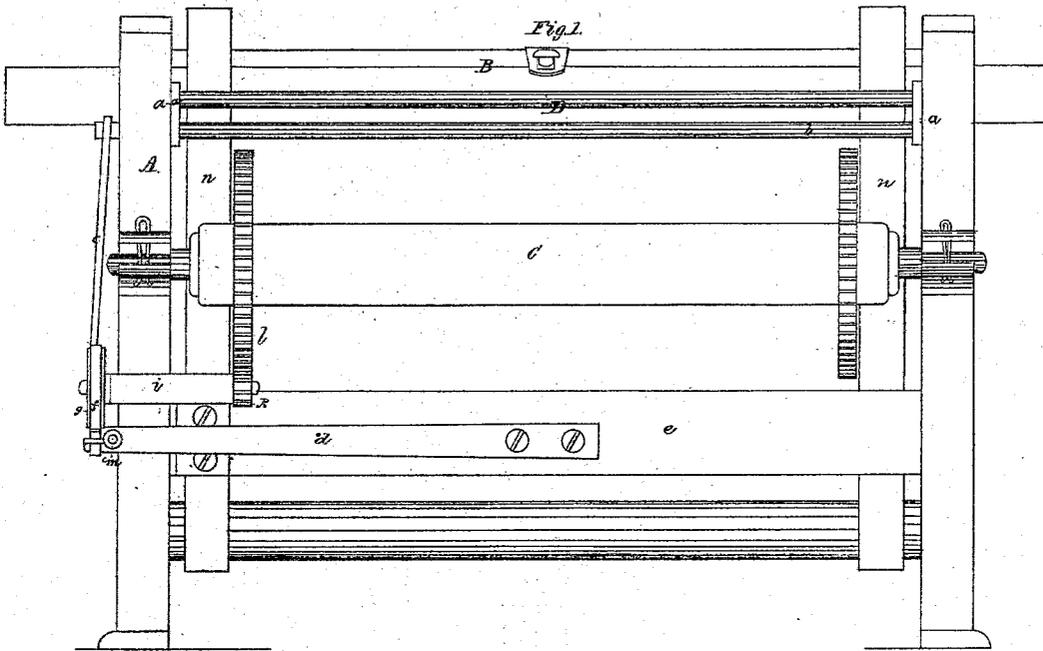


G. DRAPER.  
LET-OFF FOR LOOMS.

No. 80,534.

Patented Aug. 4, 1868.



Witnesses  
J. M. Piper  
J. H. Brown

George Draper  
by his attorney  
R. H. Colby

# United States Patent Office.

GEORGE DRAPER, OF HOPEDALE, MASSACHUSETTS.

Letters Patent No. 80,534, dated August 4, 1868.

## IMPROVEMENT IN LET-OFF FOR LOOM.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that I, GEORGE DRAPER, of Hopedale, of the county of Worcester, and State of Massachusetts, have made a new and useful invention, having reference to the "Let-Off" Mechanism of a Loom for weaving cloth; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is an elevation, and

Figure 2 an end view of a loom-frame, its sley and yarn-beam, as provided with my invention; the first of such figures being made to exhibit the yarn-beam side of the frame.

On the sixth of January, A. D. 1844, a patent was granted to William Brayton, of Warren, of the State of Rhode Island, for an "improved let-off motion for regulating the delivery of the yarn in a weaving-loom."

My invention is similar in some respects to that of Brayton, although differing therefrom in important particulars, and such particulars I have hereinafter described.

In carrying out my invention, I connect the spring of the friction-strap with the lay by means of a rod, or its equivalent, pivoted to the lay.

Without the said connection, or its equivalent, the yarn will be delivered by the beat of the sley and the strain of the warps at the period when the weft is being beaten in.

My combination or invention prevents the delivery of the yarn at the beat, as under such circumstances the friction on the wheel of the friction-strap will be increased rather than diminished. The yarn or warp will be delivered only when the strain on it is sufficient to turn the yarn-beam without regard to the beating in of the weft.

In the drawings, A denotes the loom-frame, B the lay, C the yarn-roller or beam, and D the "whip-roller."

The said whip-roller has its journals supported in bearings in two arms, *a a*, projecting from a shaft, *b*, which extends across the loom, and is sustained in bearings in the frame A.

A long arm, *c*, projecting down from one end of the shaft, bears against a spring, *d*, which, at or near one end, is fixed to the girt, *e*, of the frame A, and at the other to one end of a friction-strap, *f*, which goes partially about the periphery of a wheel, *g*, and is fastened to a stud, *h*, extended from the loom-frame.

The said wheel *g* is fixed on a shaft, *i*, on whose inner end is a toothed pinion, *k*, which engages with the gear *l* of the yarn-beam.

A rod, *l'*, having a head, *m*, at one end, is extended through a hole in the spring *d*, and is pivoted or jointed to an arm, *n*, extended from one of the swords of the lay.

I would remark that the arm *c*, the shaft *b*, and the arms *a a*, I term the "operative lever" of the whip-roller. The train of gears of the yarn-beam includes the gear *l*, the pinion *k*, and the shaft *i*.

From the above, it will be seen that while the lay is in retreat, the said rod *l'* will slide back through the spring, and when the lay advances and beats the weft into the warps, the rod will draw upon the spring so as to tighten the friction-strap on its wheel. Thus, with my invention, no delivery of the yarn can take place at the beat of the sley, such delivery being due only to the increase of the strain or tension on the warps that may be produced from time to time by other causes.

I make no claim to the combination of the friction-strap *f*, its wheel *g* and spring *d*, with the whip-roller D, and its operative lever, the yarn-beam C, and the train of gears thereof.

What I claim, is—

The combination of the connection-rod *l'*, or the mechanical equivalent thereof, with the lay B, and the mechanism applied to the whip-roller D and the yarn-beam C, such mechanism consisting of the friction-strap *f*, its wheel *g* and spring *d*, and the operative lever and train of gears, as explained.

GEORGE DRAPER.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.