

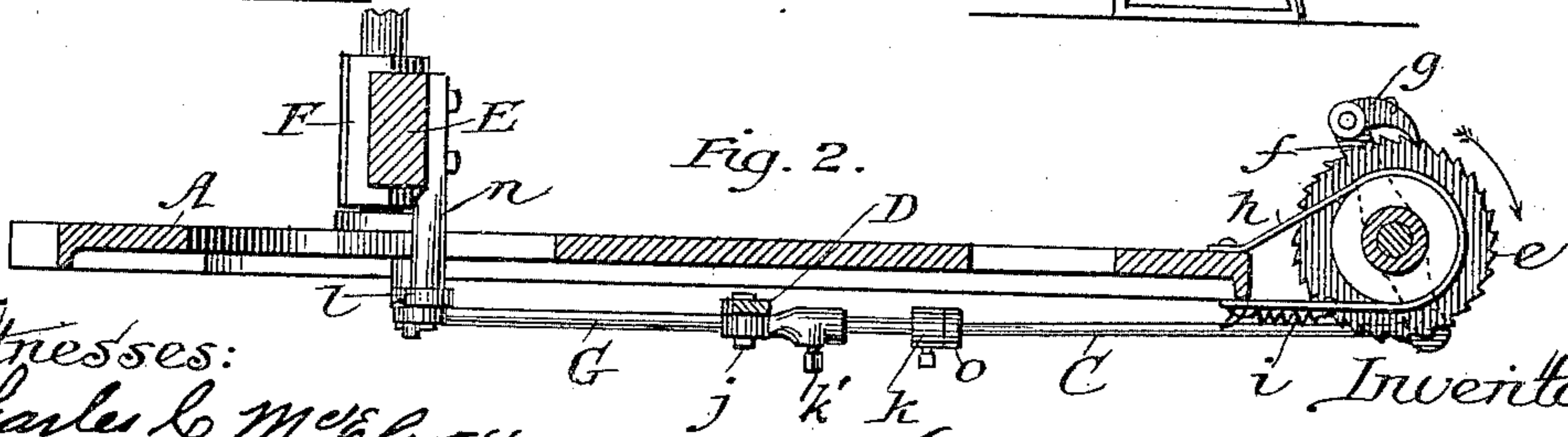
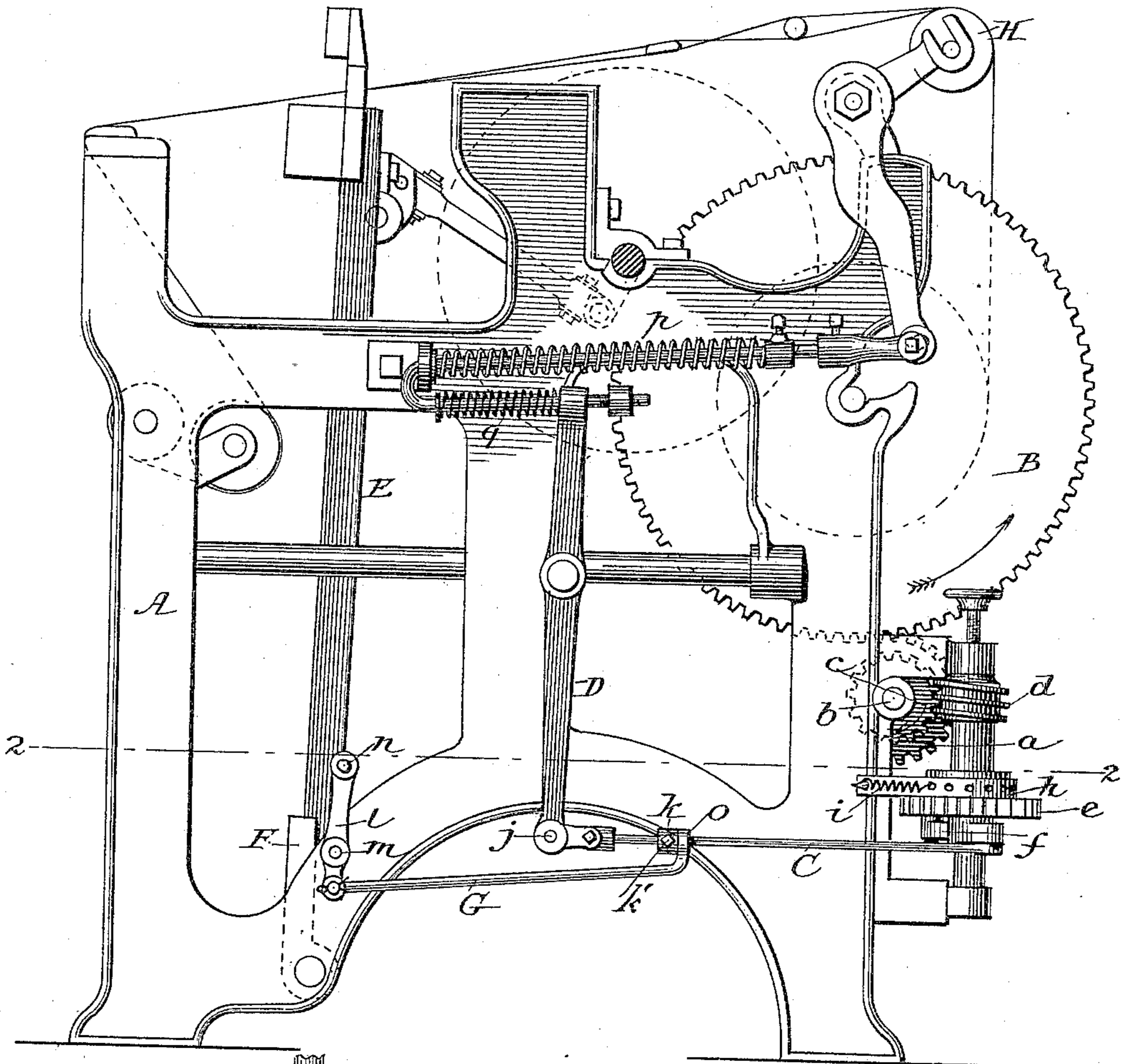
(No Model.)

L. C. ROBINSON.  
LET-OFF MOTION FOR LOOMS.

No. 436,724.

Patented Sept. 16, 1890.

*Fig. 1.*



Witnesses:  
Charles L. McChesney  
George G. Sutherland

Inventor:  
Lyman C. Robinson

# UNITED STATES PATENT OFFICE.

LYMAN C. ROBINSON, OF JANESVILLE, WISCONSIN, ASSIGNOR OF ONE-HALF  
TO GEORGE E. W. MARSDEN, OF SAME PLACE.

## LET-OFF MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 436,724, dated September 16, 1890.

Application filed February 1, 1890. Serial No. 338,895. (No model.)

*To all whom it may concern:*

Be it known that I, LYMAN C. ROBINSON, residing at Janesville, Rock county, and State of Wisconsin, and a citizen of the United States, have invented a new and useful Improvement in Let-Off Motions for Looms, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an end view of a loom, showing my invention; and Fig. 2 is a section at line 2 2 of Fig. 1, looking down.

My invention relates to let-off motions for looms, and has for its object to simplify and improve the construction thereof, as herein-after more particularly described.

In the drawings, A represents the loom-frame.

B is a gear-wheel on one end of the warp-beam.

*a* is a small gear-wheel on a shaft *b*, which wheel engages with the gear-wheel B.

*c* is a pinion on the shaft *b*.

*d* is a worm which engages with the pinion *c*, which worm is on a shaft supported in suitable bearings.

*e* is a ratchet-wheel secured to the shaft which carries the worm *d*. *f* is a lever on the same shaft.

*g* is a pawl on one end of the lever *f*.

*h* is a friction-band, the ends of which are connected with the frame, and the band passes around a collar on the shaft which carries the ratchet-wheel *e*.

*i* is a spring arranged to act upon the band *h* to increase its tension.

C is a rod, one end of which is pivoted to one end of the lever *f*, and the other end is pivoted at *j* to the lower end of the lever D.

*k* is a block which can be adjusted upon and secured by a set-screw *k'* to the rod C.

E is one of the vertical side bars which form part of the lay, the lower ends of which side bars are secured to castings F, which are pivoted to the frame.

*l* is a lever which is pivoted to the frame at *m*.

*n* is a bar or rod which is bolted to the bar E, its outer end being pivoted to the upper end of the lever *l*.

G is a rod, the rear end of which is connected with the lower end of the lever *l*. Its forward end is provided with an eye *o*, through which the rod C passes.

The parts which I have thus far described are such as are now in common use, with the exception of the lever *l* and its connections with the bar E and rod G.

H is a whip-roll supported in the usual manner. The intermediate parts between this whip-roll and the upper end of the lever D, including the springs *p q*, are such as are now in use to adjust the rate of let-off to the speed with which the weaving proceeds, and hence these parts and their operation need not here be more fully described.

In use, when the lay moves forward in beating the lower end of the lever *l* will be moved a little toward the front of the machine, causing the eye *o* on the forward end of the rod G to slide on the rod C, which rod C at the same time will be forced forward by the action of the lever D, moving the lever *f* and carrying the pawl over one or more notches of the ratchet-wheel *e* preparatory to letting off, and when the lay returns the lower end of the lever *l* will move toward the rear of the machine, and through the rods G and C the pawl *g* will be made to act upon the ratchet-wheel *e*, operating the let-off mechanism. Thus the let-off mechanism is operated when the lay returns after having made a beat, instead of when the lay is beating.

Many advantages result from this changed mode of operation, among which are that the weaving will be much more uniform, there being less variation and less unevenness, and a more even tension will be maintained on the warp. If there are enlarged places in the filling, they will not affect the appearance of the cloth as much as heretofore, and filling-stripes will be nearly prevented.

My improvement can be used in weaving cloth of various kinds, whether coarse or fine.

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

The combination of the lay, a lever pivoted to the frame and operated by the movement of the lay, a connecting-rod G, a rod C, a lever and pawl *f g*, and ratchet-wheel *e*, substantially as and for the purpose specified.

LYMAN C. ROBINSON.

Witnesses:

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