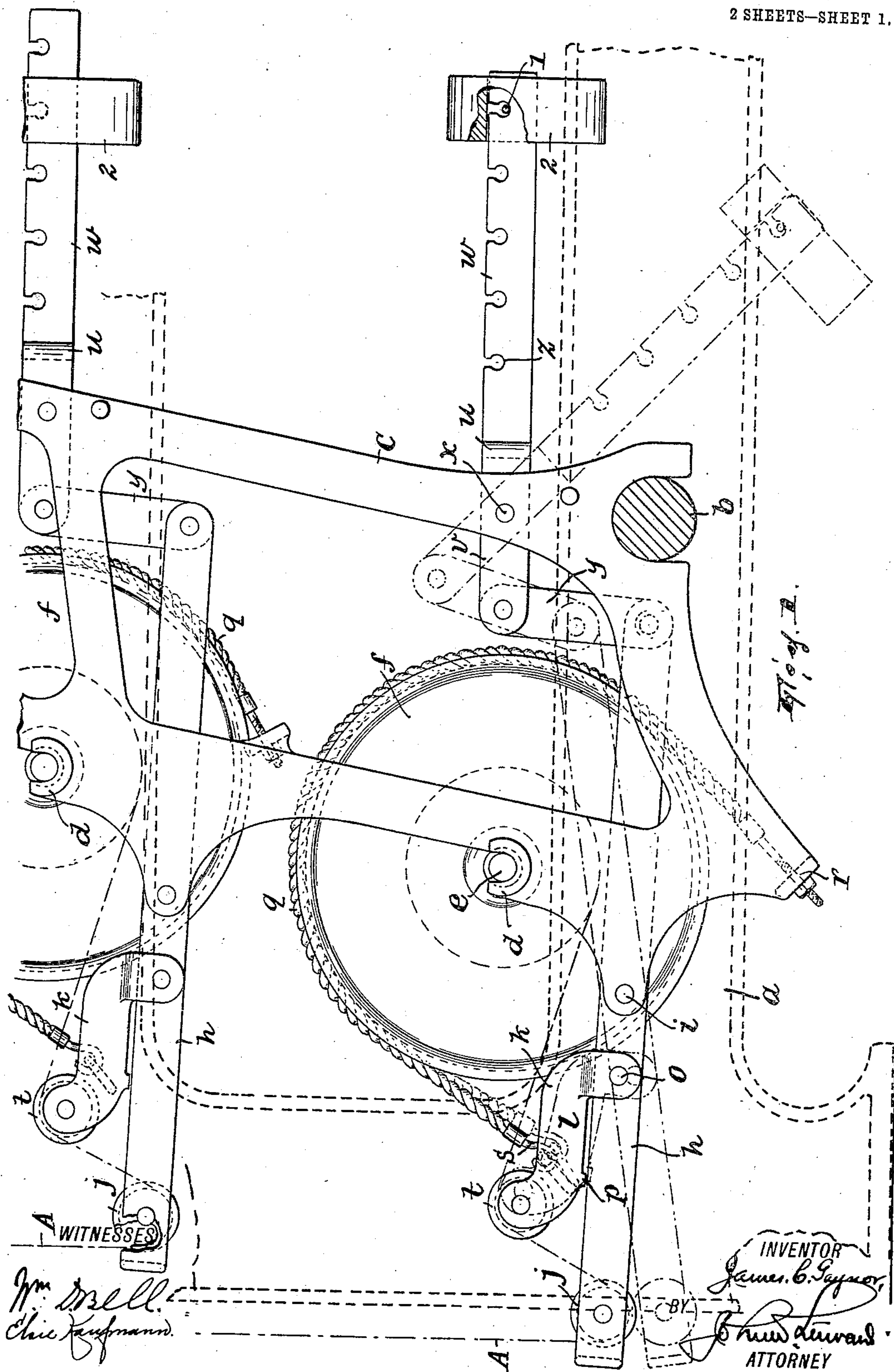


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2 SHEETS—SHEET 1.

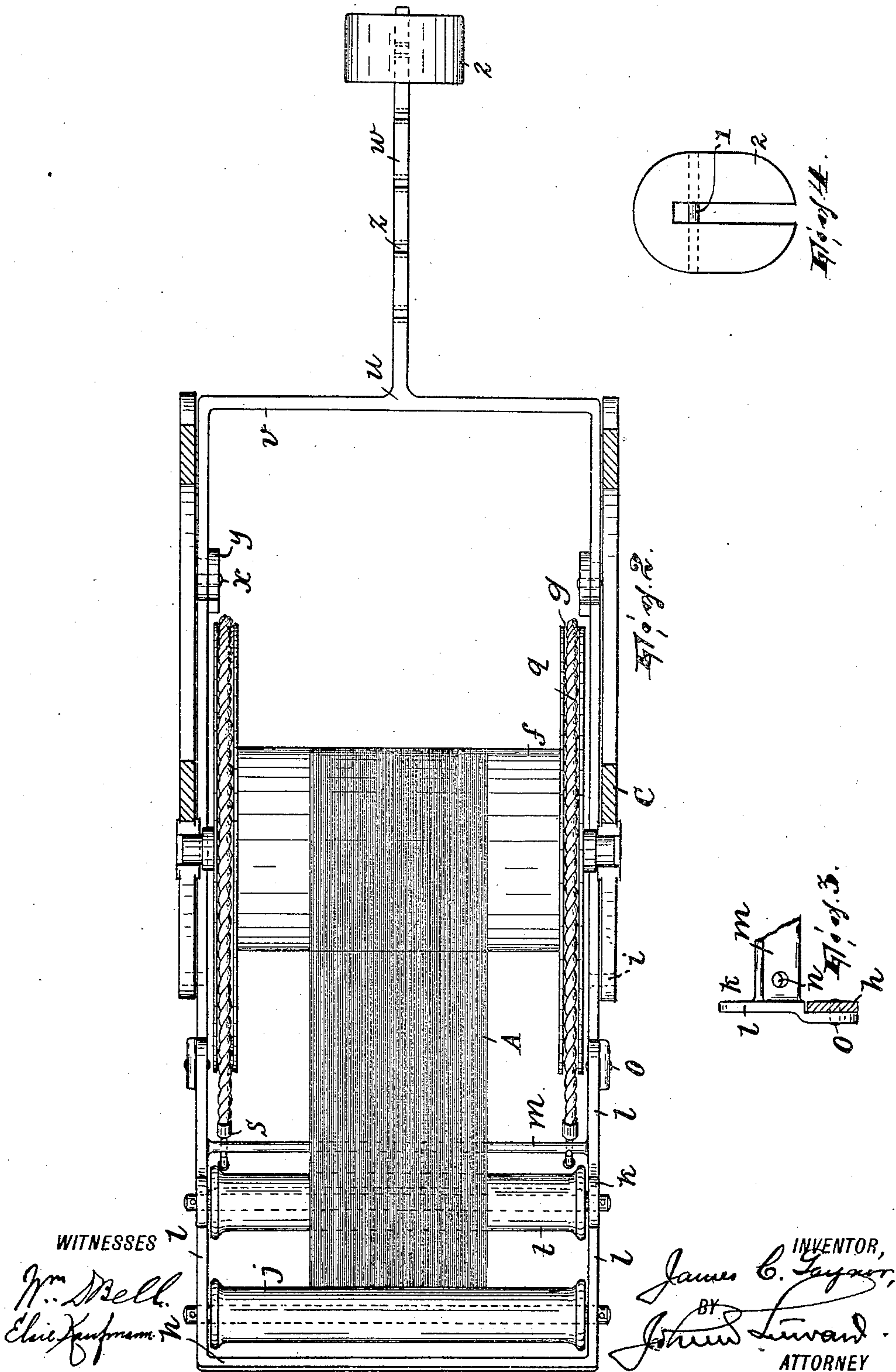


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# UNITED STATES PATENT OFFICE.

JAMES C. GAYNOR, OF POMPTON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO A. C. KLUGE, OF POMPTON, NEW JERSEY.

LET-OFF MECHANISM FOR NARROW-WARE LOOMS.

943,741.

Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed May 25, 1909. Serial No. 498,276.

*To all whom it may concern:*

Be it known that I, JAMES C. GAYNOR, a citizen of the United States, residing in Pompton, Passaic county, and State of New Jersey, have invented a certain new and useful Improvement in Let-Off Mechanisms for Narrow-Ware Looms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to looms, and particularly to the let-off mechanism thereof.

My object is to provide a let-off mechanism which will preserve an even tension on the warps under changing conditions, as when the mechanism is variously weighted or otherwise similarly adjusted to suit the character of the warp being used, and which will afford clear access both to the warp and to the beam, particularly when a number of such mechanisms are employed together, as is commonly the case in narrow-ware looms.

In view of the foregoing, my invention consists in providing a means for opposing a warp-controlled resistance to the rotation of the beam, the same comprising two co-operative warp-engaged lever-structures one of which is fulcrumed in the support, in combination with a weight-lever also fulcrumed in the support and normally holding said means in rotation-resisting relation to the beam.

In the accompanying drawings I have fully illustrated my invention.

Figure 1 is a view in side elevation of two let-off mechanism for looms, and of a part of the loom frame, the latter being shown partly in dotted outline and partly in section; Fig. 2 is a plan view of the lower let-off mechanism in Fig. 1, showing the stands thereon in horizontal section; and, Figs. 3 and 4 illustrate details.

*a* designates the loom frame and *b* one of the horizontal shafts forming a part thereof.

*c* designates a suitable support comprising stands suitably arranged in the frame *a* and in the present instance resting on the shaft *b* and formed with open bearings *d* for the trunnions *e* of the beams *f*, the same having

their flanges peripherally grooved, as at *g*, in the usual manner.

In Fig. 1, the lower tension mechanism there shown is appropriated to the ground warp; the upper mechanism may be also appropriated to a ground or other warp, such as a face warp, edge-warp, etc. Both mechanisms are in the present instance alike, so a description of one will serve for the other.

In the stands *c* is fulcrumed a lever-structure *h* having a substantially U-shaped form, the base of the U being at the rear end thereof; the pivots *i* of this lever-structure are disposed between its ends, preferably midway; in its outer end is shown the usual roller *j* under which warp *A* extends. In this lever-structure is fulcrumed another lever-structure *k*. This comprises two side members *l* each having its rear end turned up and its forward end turned down, and a cross-piece *m* integrally connecting the side members *l* and formed near its ends with the holes *n*. The downwardly projecting end of each member *l* receives the pivot *o* for the lever-structure *k* and bears preferably against the outside face of the lever-structure *h*, the remainder of member *l* being disposed above the corresponding side of lever-structure *h* and lying in substantially the same plane, so that a downwardly projecting lug *p* on member *l* may contact with lever-structure *h* in the movement of one lever structure toward the other.

A brake-band *q* is extended around each flange of the beam *f*, lying in the groove *g* thereof; each brake band is at one end adjustably fixed, as at *r*, to one of the stands *c* and at the other end carries a hook *s* which is passed through the hole *n* in the cross-piece *m* of the lever-structure *k*. In the upwardly projecting ends of lever-structure *k* is journaled a roller *t* over which the warp passes on its way from the under side of the beam *f* to roller *j*. In the stands *c* is also fulcrumed the weight-lever *u*. This comprises a U-shaped portion *v* and a forwardly projecting arm *w*. The fulcrum of this lever is afforded by two pivots *x*, and back of each pivot each leg of the U-shaped portion *v* is pivotally connected with the corresponding leg or side of lever-structure *h* by a link *y*. The arm-portion *w* of lever *u* is notched along its upper edge, as at *z*, and these notches are adapted to receive a pin 1 which



traverses the slot of a weight 2 adapted to straddle the arm *w*. To insure against the weight being jarred from the arm when lever *u* is allowed to fall, the notches *z* have 5 restricted entrances, as shown.

In use, the mechanism operates substantially as follows: The tendency of the weight of lever-structure *h* is to exert a tension on the brake bands *q* so that the latter act to 10 resist frictionally the rotation of the beam *f*, the resistance thus occasioned being dependent upon the elevating action of the warp with respect to the lever-structures *h* and *k*, upward movement of the former acting, as 15 will be obvious, to raise the latter and hence reduce the tension on the brake bands. By providing the weight-lever *u*, having the adjustable weight 2, and connecting said weight-lever with the lever-structure *h* in 20 the manner stated, I make the resistance offered by the brake bands *q* more even and regular in nature than it would otherwise be and at the same time make it possible to vary such resistance to suit the nature of 25 the warp being used, with the result that under practically any conditions a uniform tension may be exerted on the warp.

Having thus fully described my invention what I claim as new and desire to secure by 30 Letters Patent is:

1. In a let-off mechanism for looms, the combination of a support, a warp-beam journaled in said support, means for opposing a warp-controlled resistance to the rotation 35 of the warp-beam comprising two coöperative warp-engaged lever-structures, one of which is fulcrumed in the support, and a weight-lever also fulcrumed in the support and normally holding said means in rotation-resisting relation to the warp-beam, 40 substantially as described.

2. In a let-off mechanism for looms, the combination of a support, a warp-beam journaled in said support, means for opposing

a warp-controlled resistance to the rotation 45 of the warp-beam comprising two coöperative warp-engaged lever-structures, one of which is fulcrumed in the support between its ends and is engageable with the other at one side of its fulcrum, and a weight-lever 50 fulcrumed in said support and operatively connected to the first-named lever-structure at the other side of its fulcrum, substantially as described.

3. In a let-off mechanism for looms, the 55 combination of a support, a warp-beam journaled in said support, a warp-engaged lever-structure fulcrumed in said support, means for exerting a braking influence upon the warp-beam comprising another warp-engaged lever-structure fulcrumed in the first-named lever-structure at one side of the fulcrum thereof and extending over and adapted to contact with the first-named lever-structure, and a weight-lever also fulcrumed 65 in the support and operatively connected with the first-named lever-structure at the other side of the fulcrum thereof, substantially as described.

4. In a let-off mechanism for looms, the 70 combination of a support, a warp-beam journaled in the support, coöperative lever-structures, one of which is fulcrumed in the support, a braking device operatively connected to one of said lever structures, a 75 weight-lever also fulcrumed in the support and operatively connected to the latter lever-structure, and an adjustable weight arranged on said weight-lever, substantially as described. 80

In testimony that I claim the foregoing I have hereunto set my hand this 22nd day of May, 1909.

JAMES C. GAYNOR.

Witnesses:

JOHN W. STEWARD,  
WM. D. BELL.