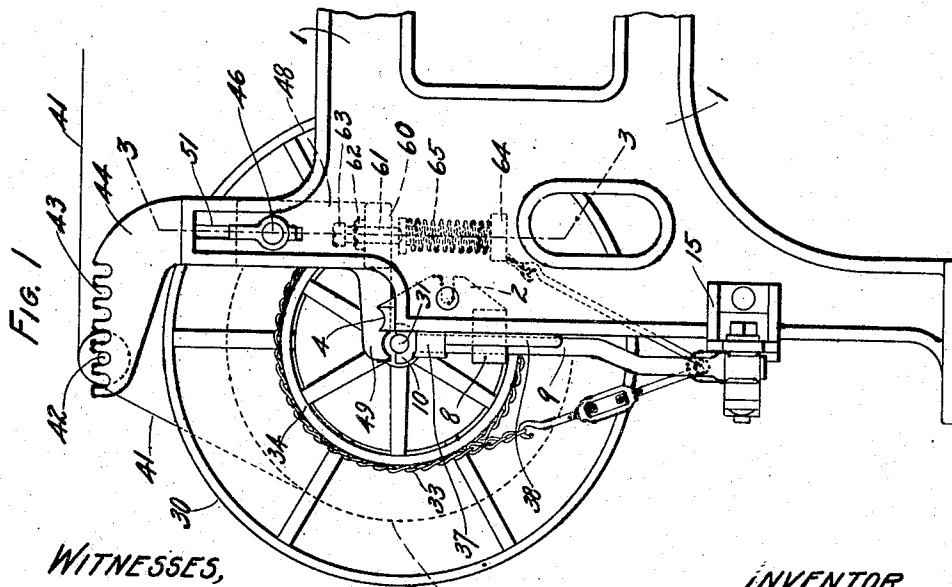
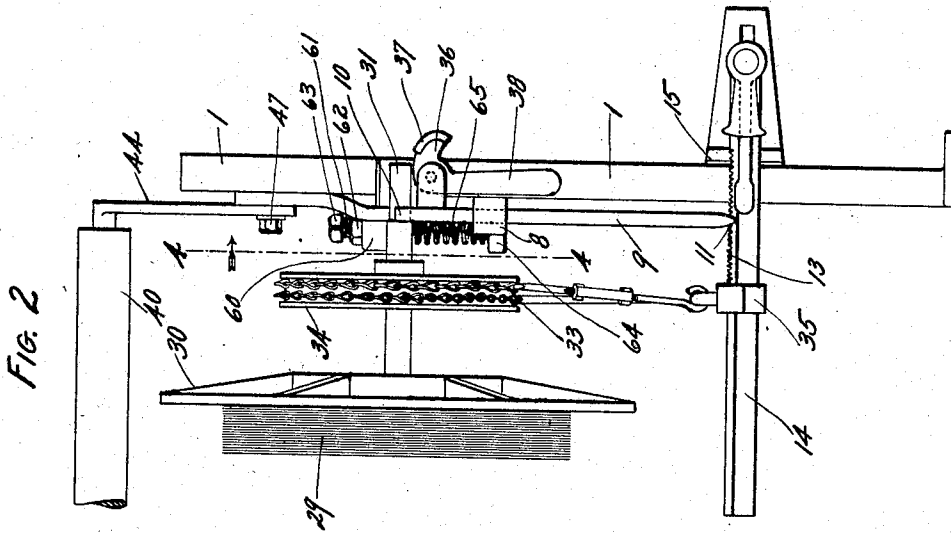


J. NORTHROP.  
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APPLICATION FILED MAY 6, 1909.

941,380.

Patented Nov. 30, 1909.

2 SHEETS—SHEET 1.



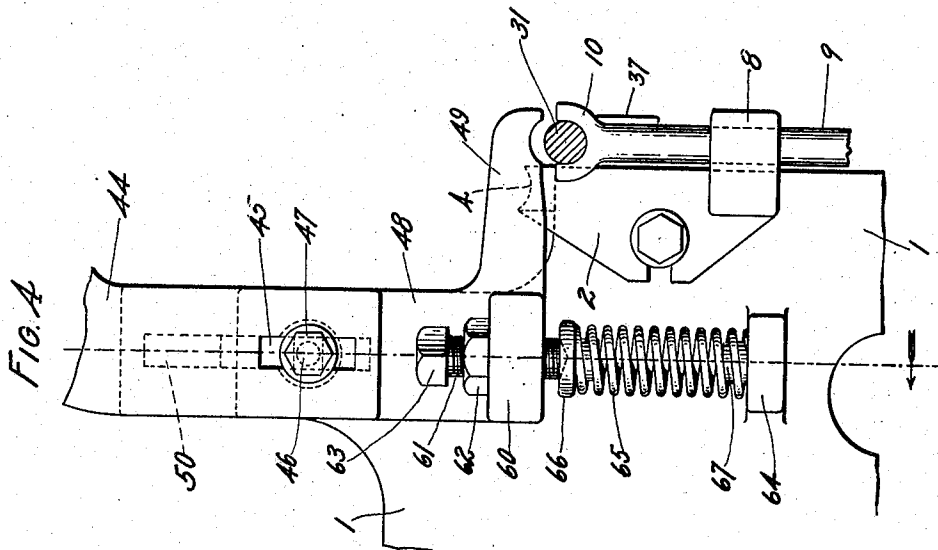
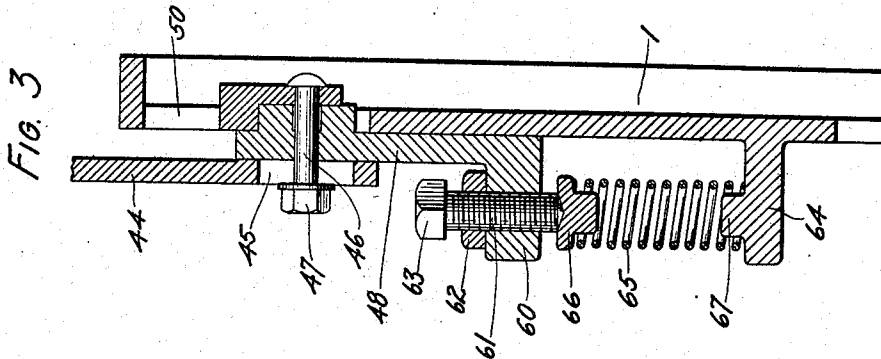
WITNESSES,  
Howard Hanson  
Nathan G. Lombard.

INVENTOR,  
JONAS NORTHROP,  
BY Robt. P. Harris,  
ATTY.

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2 SHEETS—SHEET 2



WITNESSES,  
*Howard Hanson*  
*Nathan C. Lombard*

INVENTOR,  
JONAS NORTHROP,  
By *Robt. P. Hains*  
ATTY.

# UNITED STATES PATENT OFFICE.

JONAS NORTHPROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS.

## LET-OFF MECHANISM FOR LOOMS.

941,380.

Specification of Letters Patent.

Patented Nov. 30. 1909.

Application filed May 5, 1909. Serial No. 494,171.

*To all whom it may concern:*

Be it known that I, JONAS NORTHPROP, a citizen of the United States, residing at Hopedale, in the county of Worcester and State of Massachusetts, have invented an Improvement in Let-Off Mechanisms for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

The invention to be hereinafter described relates to let-off mechanisms for looms of the friction let-off type.

The present invention is a development from the let-off mechanism shown, described, and claimed in my prior patent, No. 912,722, February 16, 1909. In said prior patent means were disclosed whereby the weight of the warp beam determined the amount of frictional resistance such beam would offer to the withdrawal of the warp threads, and whereby the tension or pull of the warp threads in unwinding the beam was made effective in counteracting any lifting tendency of the said beam due to the pull of the warp threads. As one form of means for carrying the said invention into effect, the whip roll support was made to rest upon the journals of the warp beam. In such event, however, not only did the tension of the warp threads re-act upon the journals of the warp beam to prevent lifting movement thereof, but the weight of the whip roll and its support did the same, and incidentally added to the weight of the warp beam and its load.

The present invention aims to yieldingly sustain the whip roll and support of said prior structure, so that the warp beam is normally free from such weight, and yet to permit the whip roll support to yield and rest upon the journals of the warp beam when tension is placed upon the warp.

The invention will best be understood from the following description and accompanying drawings disclosing one form of means for carrying the invention into effect.

In the drawings, Figure 1 is a side view of sufficient of a loom and let-off mechanism to illustrate the association of the present invention therewith; Fig. 2 is a rear elevation showing one end of the beam and its associated parts; Fig. 3 is a section on line 3-3, Fig. 1; and Fig. 4 is a section on line 4-4, Fig. 2.

The loom frame 1, the bracket 2 provided with the seat 4 to receive the journal of the warp beam when occasion requires, the cam head 36 having the seat 37, handle 38, the guide 8 for the leg 9 of the bearing 10, the end 11 of the leg 9, resting on the toothed edge 13 of the lever 14, the bracket 15 for supporting said lever 14, the warp beam 29 having a head 30, journal 31, friction pulley 34, friction member or chain 33, stirrup 35, the guide or whip roll 40 over which the warp threads pass, the whip roll support 44 having the slot 45 and adjustably connected to the depending arm 48 by the bolt and nut 46 and 47, and guided in its vertical movement by the slot 50 formed in the loom frame, and the toe 49 disposed above the journal of warp beam, may all be substantially as indicated in my prior patent mentioned or otherwise as described.

In the said patent the toe 49, during such times as the whip roll support 44 was in co-acting relation with the journals of the warp beam, rested upon said journals. In the present invention, however, the whip roll support is yieldingly sustained so as to maintain the toe 49 some distance above the journal 31 of the warp beam, the general construction being such that when tension is placed upon the warp thread, as during the formation of the shed, the whip roll support will be depressed against its yielding sustaining means so that the toe 49 will then come in contact with the journal of the warp beam, and when the strain or tension of the warp thread is relieved, as by closing the shed, the yielding sustaining means for the whip roll support will raise the same, thus acting as a thin place preventer. As one means for carrying this feature of the invention into effect, the whip roll support, preferably the depending arm 48, is provided with a projection 60 through which is screw-threaded an adjusting bolt 61, Figs. 3 and 4, provided with a lock nut 62 and a turning head 63.

Secured or projecting from the loom frame 1 below the projection 60 is a lug or bracket 64, and interposed between the projection 60 and bracket or lug 64 is the sustaining means or spring 65, the upper end of which engages the seat of a cap 66 bearing against the end of the adjusting screw bolt 61, and the opposite end of said spring preferably embraces a lug or nipple 67. The

construction and general disposition of the parts is such that when the warp thread 41 is not under tension the spring 65 will sustain the whip roll support and whip roll so that the toe 49 will be disposed some distance above the journal 31 of the warp beam, but when tension is placed upon the warp threads, as hereinbefore pointed out, the whip roll and whip roll support will be depressed to carry the toe 49 into contact with the journal 31 of the warp beam, and when the tension is released on the warp threads, the spring 65 will raise the whip roll and whip roll support thus causing this characteristic action of the whip roll to operate as a thin place preventer, as will be readily understood by those skilled in the art.

In the above described construction, it will be understood that the drawings show and the description is directed to devices at one end of the warp beam, those at the other end being a duplicate and, consequently, unnecessary to specifically describe. It will also be obvious that the sustaining means or spring 65 acts as a counterbalance for the whip roll and whip roll support, and that changes and variations may be made in the details of structure without departing from the true scope of the present invention which is definitely set forth in the claims.

What is claimed is:

1. In a loom, the combination of a warp beam, a friction let-off governed by the weight of the warp beam effective thereon, means acting under warp tension to maintain the weight of the warp beam effective on the friction let-off under variation of warp tension, and balancing devices for said means.

2. In a loom, the combination of a warp beam, a friction let-off governed by the weight of the warp beam effective thereon, a guide over which the warp threads pass from the warp beam, means connected to said guide and acting under warp tension to maintain the weight of the warp beam effective on the friction let-off under variations of warp tension, and yielding supporting devices for said means.

3. In a loom, the combination of a warp beam, a friction let-off depending for the degree of its effective action upon the weight of the warp beam, means reacting under tension of the warp threads for preventing decrease in effective weight of the warp beam upon the friction let-off due to warp tension, and a yielding support for said means.

4. In a loom, the combination of a warp beam, movable bearings therefor, a friction device connected to said movable bearings to govern the let-off by the weight of the warp beam, means controlled by the tension of the warp threads for preventing movement of said bearings due to warp tension, and a yielding support for said means acting under the varying tension of the warp threads to move said means.

5. In a loom, the combination of a warp beam, movable bearings therefor, a friction device connected to said bearings to govern the let-off by the weight of the warp beam, and a yieldingly mounted thin place preventer acting under warp tension to maintain the weight of the warp beam effective on the friction let-off under varying conditions of warp tension.

6. In a loom, the combination of a warp beam, movable bearings therefor, a friction device connected to said bearings to govern the let-off by the weight of the warp beam, a whip roll, a whip-roll support having a part acting under warp tension to maintain the weight of the warp beam effective on the friction let-off, and yielding means permitting the whip roll to yield under tension of the warp threads.

7. In a let-off mechanism for looms, the combination of a warp beam, means for frictionally retarding rotative movement thereof, a whip-roll support having a portion adapted to engage a part connected to the warp-beam, a whip-roll sustained by said support, and a spring for normally maintaining the whip-roll support out of contact with the said part connected to the warp beam and permitting it to yield and contact with said part connected to the warp beam under tension of the warp threads.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JONAS NORTHROP.

Witnesses:

PATRICK J. O'CONNELL,  
WENDELL WILLIAMS.