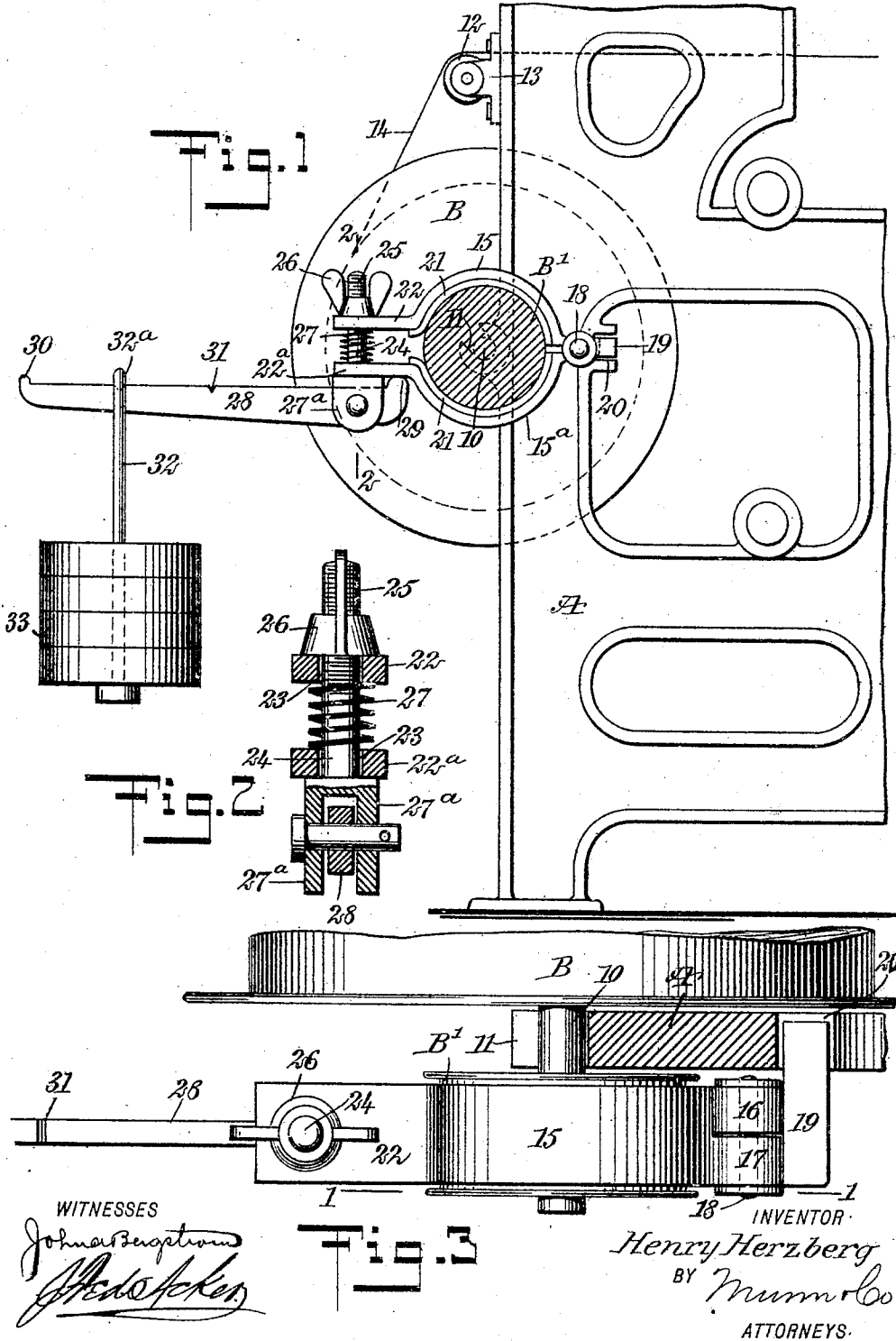


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LET-OFF MOTION FOR LOOMS.
APPLICATION FILED MAY 1, 1907.

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HENRY HERZBERG, OF NEW YORK, N. Y.

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No. 909,596.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY HERZBERG, a citizen of the United States, and a resident of the city of New York, Astoria, borough of Queens, in the county of Queens and State of New York, have invented a new and useful Improvement in Let-Off Motions for Looms, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a simple, effective and durable tension device readily applicable to the head of the warp beam of any loom, and which can be quickly and conveniently set to regulate the rapidity at which the warp thread shall leave the warp beam.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a portion of the frame of a loom, showing the head of the warp beam in section and the let-off or tension device in side elevation, the section being taken practically on the line 1—1 of Fig. 3; Fig. 2 is an enlarged vertical section through the let-off attachment taken practically on the line 2—2 of Fig. 1; and Fig. 3 is a horizontal section through a portion of the frame, and a plan view of the end portion of the warp beam and its head, also a plan view of the applied let-off mechanism.

A represents a side piece of the frame of a loom, B the warp beam provided with the customary head B', the trunnions 10 of the warp beam being mounted in suitable bearings 11 carried by the side pieces A of the frame, and above the warp beam B a guide roller 12 is mounted in suitable bearings 13 also carried by the side pieces of the frame, and the roller 12 receives the warp thread 14 as it leaves the warp beam B.

The body of the attachment consists of opposing segmental sections 15 and 15^a, the concaved surfaces of the said sections 15 and 15^a being made to face each other, as is best shown in Fig. 1. The section 15^a is

provided with a knuckle 16 at its inner end and the section 15 is provided with a corresponding knuckle 17 also at its inner end, and a pintle 18 is passed through the knuckles 16 and 17 so as to provide a hinge connection between the two body sections 15 and 15^a. The upper section of the body is held stationary and this is accomplished by locating a lip 19 at the inner side portion of the knuckle 17, as is shown in Figs. 1 and 3, which lip may be attached to or may be integral with the said knuckle 17, and is carried inward in direction of the side piece A of the frame and is made to enter a suitable recess 20 in the said side piece, as is also shown in Figs. 1 and 3.

At the inner faces of the body sections 15 and 15^a, segmental shoes 21 are located, and these shoes are adapted to engage directly with the head B' of the warp beam, and the shoes 21 may be made of leather or other similar material, so as to obtain the greatest possible frictional engagement between the sections 15 and 15^a of the body of the attachment and the head B' of the warp beam, as is shown in Fig. 1.

The upper body section 15 is provided with a horizontal outwardly extending flange 22 at its outer end, and the lower body section 15^a is provided with a corresponding flange 22^a, the two flanges 22 and 22^a being one below the other in parallelism, as is also best shown in Fig. 1 and likewise in Fig. 2. Each flange 22 and 22^a is provided with an aperture 23 therein adjacent to its outer end, and the apertures 23 of the two flanges are in vertical alinement.

A bolt 24 is loosely passed through the aperture 23 of the body flanges 22 and 22^a. The upper portion of the bolt 24 is threaded and on the threaded portion 25 of the bolt, a thumb nut 26 is screwed to a bearing upon the upper face of the upper body flange 22, as is particularly shown in Fig. 2, and between the two flanges 22 and 22^a a spring 27 is coiled around the bolt 24, having bearing against the opposing faces of both of said flanges, as is illustrated in Figs. 1 and 2 whereby to force said flanges apart when the thumb nut 26 is loosened.

The lower end of the bolt 24 of the attachment is provided with downwardly ex-

tending ears 27^a and between these ears the inner end portion of a scale beam 28 is pivoted in any suitable or approved manner, and immediately at the rear of the ears 27^a the scale beam is provided with a projection 29, that extends upward and engages with the under face of the lower body flange 22^a at a point adjacent to where said flange connects with the body section 15^a, as is shown in Fig. 1. The scale beam 28 is provided with an upwardly extending stop 30 at its outer or free end, and between the said stop and the pivot of the said scale beam 28, a series of notches 31 is formed. On the upper edge of the said scale beam a pendant 32 having a crooked upper end 32^a is supported by engagement at said crooked end with the upper edge of the scale beam 28, and the upper crooked end 32^a of the pendant 32 is provided with an under, more or less angular edge to fit in the notches 31, and the said pendant 32 carries any desired number of removable weights 33.

In the operation of this attachment, the body sections 15 and 15^a are made to engage with the head B' of the warp beam, and the lip 19 of the upper section 15 having been introduced into the recess or pocket 20 in the frame, the bolt 24 is tightened or loosened by means of the thumb nut 26, to exert greater or less tension upon the spring 27 intervening between the flanges 22 and 22^a, and at this time the pendant 32 will be placed as close to the pivot of the scale beam 28 as possible or desirable, and in this manner the normal degree of tensional bearing of the body sections 15 and 15^a on the head of the warp beam is regulated. When the tension is to be increased so as to lessen the speed at which the warp thread will leave the warp beam, the pendant 32 is carried outward to, for example, the first notch 31 and one or more weights 33 are placed in position on the pendant as may be required. After the weights have served their purpose at the first notch 31, and a greater degree of tension is required so as to make the warp thread leave the warp beam still slower, the pendant 32 with one or more weights applied is moved to the second outer notch 31 and so on; according to the extent to which the pendant 32 is moved outward on the scale beam will be the severity of the tensional contact between the body of the attachment and the head of the warp beam. It will be observed that the weight on the lever 28, assisted by the bolt 24 and the nut 26, applies the tension flanges 22, 22^a to the beam, the spring 27 acting as a cushion between the flanges, and when the weight on the lever is shifted inward, the spring automatically forces the flanges apart. Thus it will be observed that the speed at which

the warp thread shall leave the warp beam can be quickly and conveniently determined and changed at pleasure, and that the device through the medium of which the tension is applied to the warp beam is exceedingly simple and is applicable to a warp beam of any loom.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. In a let-off motion for looms, a body section comprising opposing segmental sections having a hinged connection, means for limiting the movement of one of the sections, means acting between the free ends of the sections to normally force them apart, and a counter-balancing device acting against said means.

2. In a let-off motion for looms, a body section comprising opposing segmental sections having a hinged connection, means for limiting the movement of one of the sections, means acting between the free ends of the sections for moving them apart, a counter-balancing device acting to move the sections toward each other, said device comprising a beam having pivotal connection with the first section and bearing against the other section.

3. In a let-off motion for looms, opposing segmental body sections having a hinged connection, means for limiting the movement of one of the sections, the other being free for movement to and from the first named sections, a spring intervening between the two body sections at their free ends, a regulating device for the said spring, a beam pivotally attached to the said regulating device, and having bearing upon the moving body section to assist in holding said section in regulated position.

4. In a let-off motion for looms, a body section consisting of opposing segmental members having a hinged connection at one of their ends, means for limiting the movement of the uppermost member, a spring located between the free end portions of said members, means for compressing or permitting said spring to expand, a weight operated lever carried by said compressing means and exerting pressure in direction of the uppermost member of the body.

5. In a let off motion for looms, the combination with a body portion consisting of opposing segmental sections having a hinged connection at one end, and parallel flanges at their opposing ends, means for limiting the movement of one of the body sections, a spring intervening between the flanges of the body sections, and a bolt and a nut for regulating the said spring, of a beam pivotally connected with the said bolt, adjacent to the under portion of the flange of the

movable body section, the said beam being provided with an upwardly extending heel portion adjacent to its pivot for engagement with the under face of the said flange of the
5 said movable section of the body, and a weight carrying pendant supported by and movable upon the said beam.

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

HENRY HERZBERG.

Witnesses:

C. MATTMANN, Jr.,
HENRY S. STARR.