

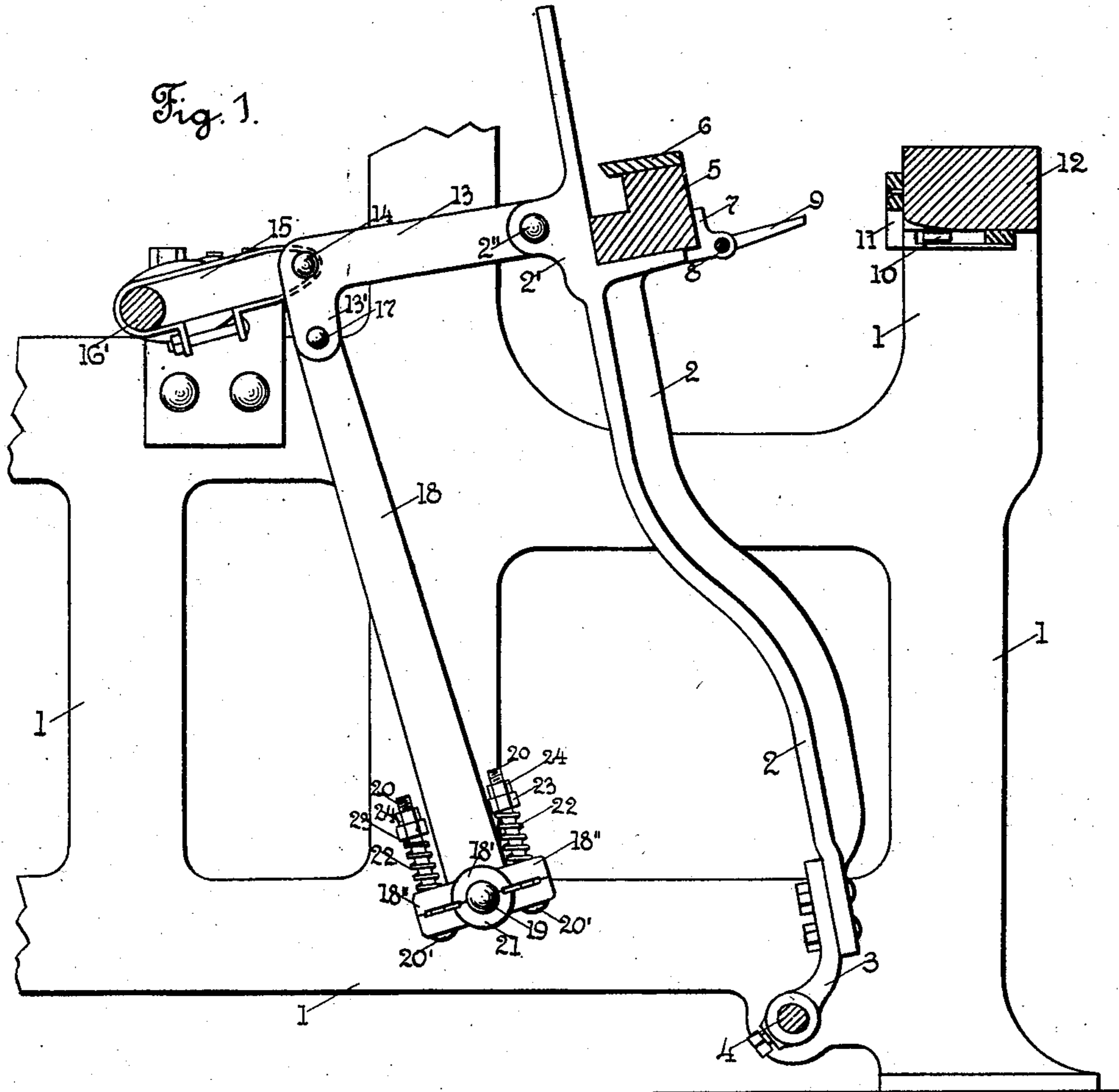
No. 763,088.

PATENTED JUNE 21, 1904.

A. S. COWAN.  
LAY MOTION FOR LOOMS.  
APPLICATION FILED APR. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses  
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M. Head.

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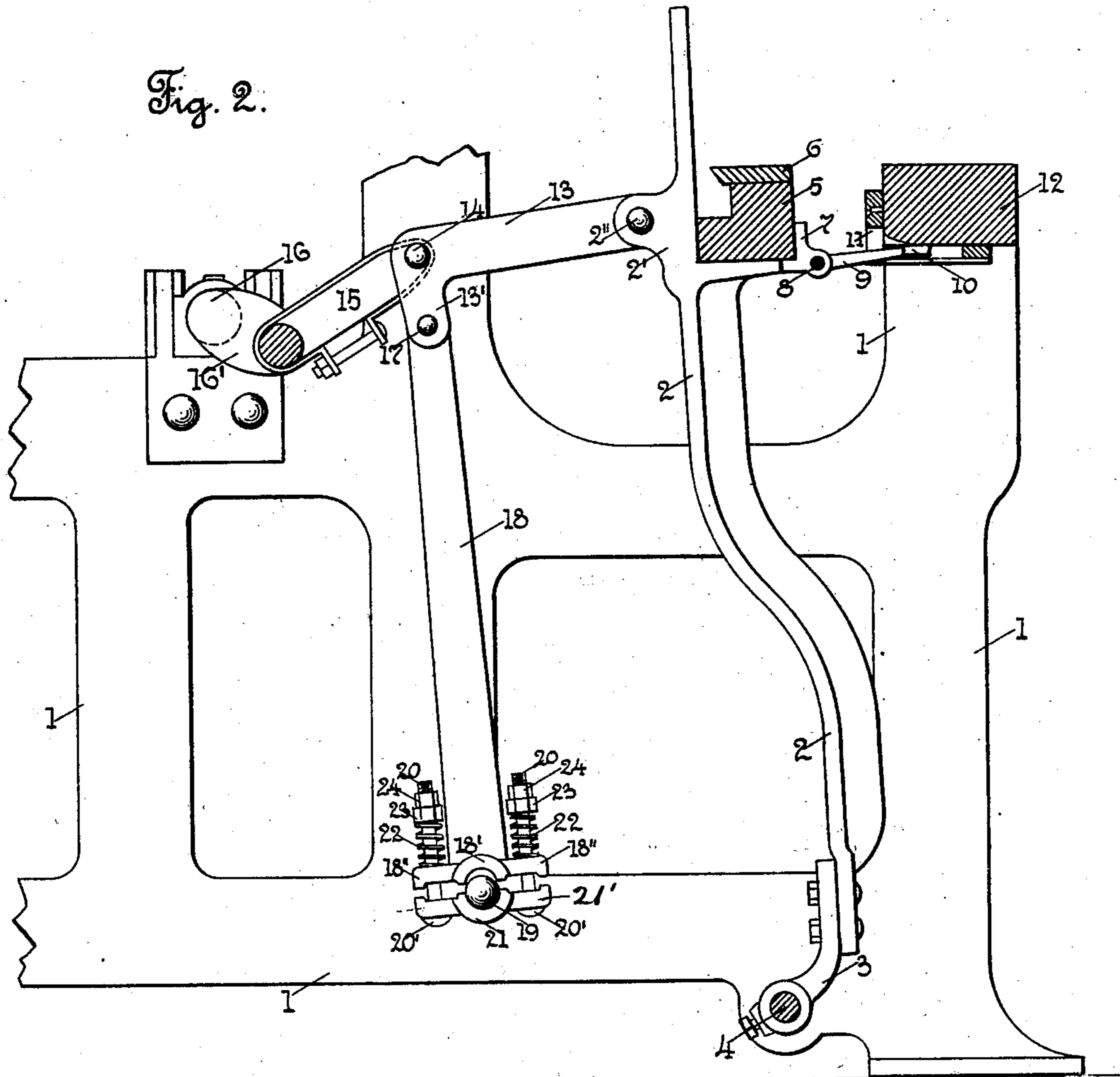
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## LAY-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 763,088, dated June 21, 1904.

Application filed April 4, 1904. Serial No. 201,372. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR S. COWAN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Lay-Motions for Looms, of which the following is a specification.

My invention relates to looms, and more particularly to the lay and its operating mechanism with a yielding connection.

The object of my invention is to provide an improved yielding connection intermediate the crank-shaft which operates the lay and the lay-sword, so that when the lay protects to stop the loom the continued movement of the crank-shaft, which is not immediately stopped, will move the yielding connection and not force forward and possibly break the lay-sword.

In my improvements I provide a pivoted arm which is pivotally and yieldingly attached and connected to a link or connector intermediate the crank-shaft and the lay-sword. When the lay protects on its forward movement, the continued movement of the crank-shaft causes the arm, yieldingly attached, to move, and thus allow the continued movement of the crank-shaft on the stopping of the lay-sword, as will be hereinafter described.

Referring to the drawings, Figure 1 is a sectional elevation of a loom-frame and lay with my improvements applied thereto and showing the lay in its rear position; and Fig. 2 corresponds to Fig. 1, but shows the lay in its protected position.

In the accompanying drawings, 1 is a portion of the loom side or end. 2 is the lay-sword, attached at its lower end to the lay-foot 3, mounted on the rock-shaft 4. The lay-sword 2 carries at its upper end the lay 5, having the race-plate 6 thereon. The protector-rod stand 7 is secured to the front lower edge of the lay and carries the rod 8, having the protector-finger 9 fast thereon, which is adapted, when the shuttle is trapped in the shed to engage the bunter-lever 10 on the bunter-stand

11, secured to the breast-beam 12, on the forward movement of the lay.

All of the above-mentioned parts may be of the usual and well-known construction and operation.

I will now describe my improvements:

To the rearwardly-extending ear 2' on the lay-sword 2 is attached, by a pin 2'' or otherwise, one end of a link or connector 13. The other end of said connector 13 is attached, in this instance by a pin 14, or otherwise, to one end of the crank-connector 15. The other end of said connector 15 is attached to the crank 16' on the crank-shaft 16 in the usual way.

The link or connector 13 has a downwardly-extending projection 13' at its inner end, and to the lower end of said projection is pivotally connected, in this instance by a pin 17, the upper end of a pivoted arm 18. The lower end of the arm 18 has in this instance a recessed portion 18' to fit onto the upper side of a stud 19, secured to the loom-frame 1, and side extensions 18'', extending out from the recessed portion 18'.

Each side extension 18'' has a hole therein through which loosely extends a bolt 20. The headed ends 20' of the two bolts 20 are secured in side extensions 21' on a half-hub piece 21, which extends upon the lower surface of the stud 19.

A spiral spring 22 encircles each bolt 20 and is confined between a nut 23 on the bolt and the upper side of the side extension 18''. A second lock-nut 24 may be used on each bolt 20.

The springs 22 act to yieldingly hold the side extensions 18'' in contact with the side extensions 21' and yieldingly hold the recessed portions 18 and half-hub portion 21 on the stud 19 to form a complete hub or collar and pivotally and yieldingly secure the lower end of the arm 18 on said stud, as shown in Fig. 1.

The pivoted arm 18 is not connected directly with the lay-sword, and said arm has a support of its own, as the stud 19, on which it has an independent swinging movement parallel with the movement of the lay-sword, and said arm 18 acts to support one end of

the link or connector 13 and the crank-connector 15.

The operation of my improvements will be readily understood by those skilled in the art.

5 When the lay moves forward and protects, as shown in Fig. 2, the protector-finger 9 strikes the bunter-lever 10, which moves back in the bunter-stand 11 in the usual way.

The movement of the bunter-lever 10, 10 through mechanism (not shown) of ordinary construction and operation, shifts the belt or throws off the power to stop the loom; but the crank-shaft 16 does not stop immediately, but pushes, through the crank-connector 15, the 15 link or connector 13 in an upward direction, and the arm 18 moves up with it, causing the springs 22 to be compressed and the recessed part 18 to be separated from the half-hub part 21, as shown in Fig. 2, and thus relieve 20 the connector 13 and the lay-sword 2 from

the strain which might break one or both of them.

It will be understood that the details of construction of my improvements may be varied, if desired. 25

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

In a loom, the combination with the lay, and the crank-shaft, of intermediate mechanism yieldingly connecting the lay and the 30 crank-shaft, said mechanism comprising a link or connector, and a pivoted arm yieldingly attached, independent of the lay-sword, and connected with said link or connector, 35 substantially as shown and described.

ARTHUR S. COWAN.

Witnesses:

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