

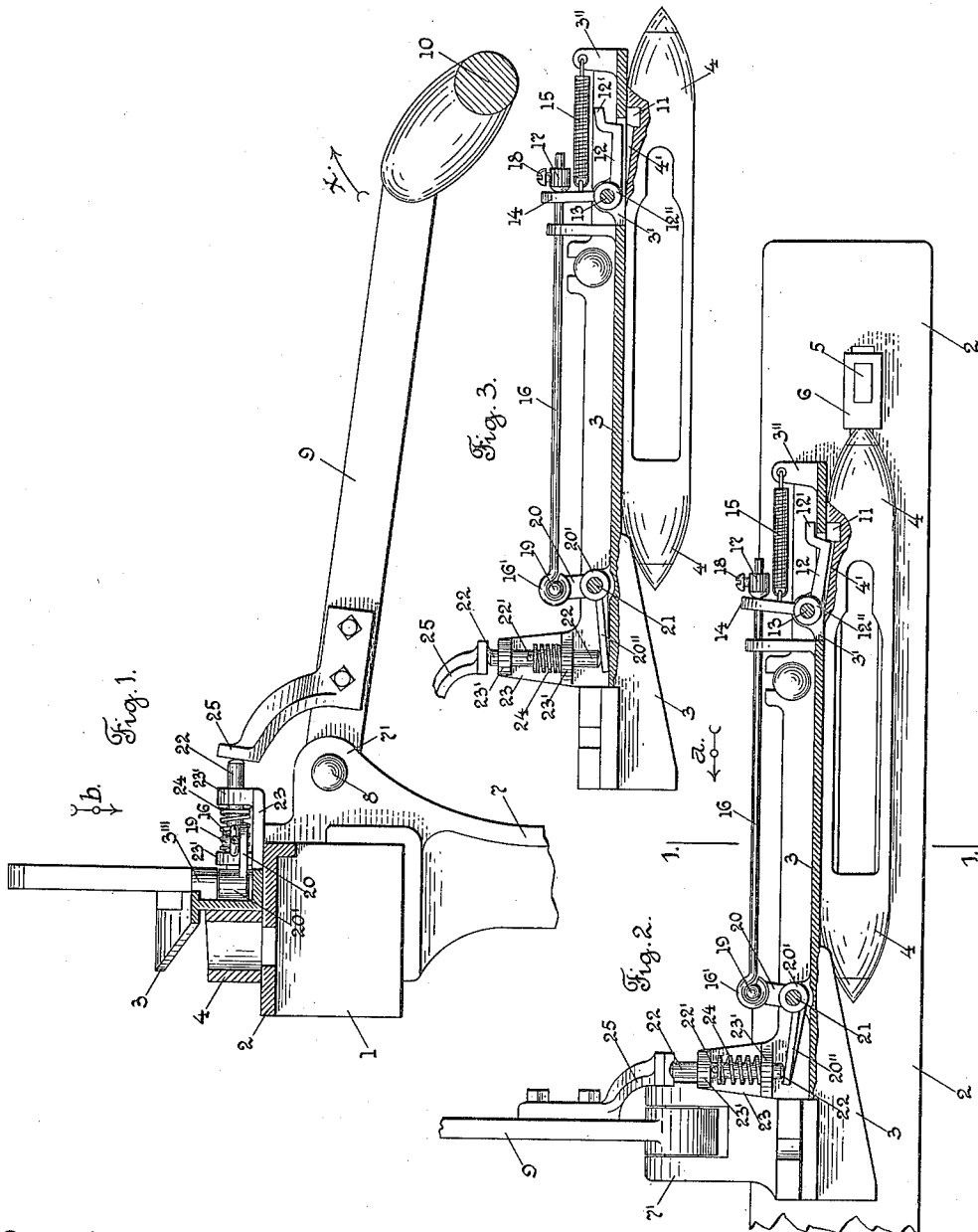
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LOOM.

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# UNITED STATES PATENT OFFICE.

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## LOOM.

960,820.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, AUGUSTIN J. CHEVRETTE, 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 Looms, of which the following is a specification.

My invention relates to looms, and particularly to a lock mechanism for locking or holding the shuttle in a shuttle box, after it has entered the box.

The object of my invention is to provide a shuttle lock mechanism for a shuttle, to lock or hold the shuttle in the shuttle box, after it has entered the box, and prevent the rebound of the shuttle, which mechanism is of simple and inexpensive construction, and can be readily applied to and combined with looms of ordinary construction.

My invention consists in certain novel features of construction of my improvements in shuttle lock mechanism, as will be hereinafter fully described.

My improvements in shuttle lock mechanism consists preferably of a lever or arm, which is pivotally mounted at the rear of a shuttle box on the loom, and near the outer end of the shuttle box, which lever or arm has a pivotal or swinging movement in a horizontal plane, and is adapted to yieldingly enter through an opening in the rear wall of the shuttle box, and extend into a recess in the shuttle, to positively lock or hold the shuttle in its proper position against the picker, while the lay moves to its front position. On the rearward movement of the lay, to the position where the shuttle is picked from the shuttle box, the locking lever will be moved out of engagement with the shuttle to release the same, preferably through the action of an arm which is secured to the crank connector of the loom, and intermediate connections between said arm and said locking lever, all as will be hereinafter fully described.

I have shown in the drawing a detached portion of the lay end of a loom, and a shuttle box on said end, and some other parts of a loom, and my improvements combined therewith.

Referring to the drawing:—Figure 1 is a vertical cross section through the lay beam, and other parts of a loom, taken at a point indicated by line 1, 1, Fig. 2, looking in the

direction of arrow *a*, same figure, and showing my improvements applied thereto. Fig. 2 is a plan view of the right hand end of the lay of a loom, and a partial section, looking in the direction of arrow *b*, Fig. 1, showing my improvements applied thereto, and, Fig. 3 corresponds to Fig. 2, but shows some of the parts shown in Fig. 2 in a different position; some of the parts shown at the left in Fig. 2 are not shown in this figure.

In the accompanying drawing, 1 is the right hand end of the lay of a loom, having the race-plate 2, and in this instance a stationary shuttle box 3, to receive the shuttle 4, in the usual way; 5 is the upper end of the picker stick; 6 is the picker, 7 is the upper part of the lay sword, having ears 7' carrying a bolt 8, to which is pivotally connected one end of a lay crank connector 9; the other end of the crank connector 9 is connected with the crank part of the crank shaft 10, in the usual way.

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

I will now describe my improvements.

The shuttle 4 has in this instance a recessed part 4' on its rear side, shown at its outer end. A block 11, preferably made of steel, is attached to the shuttle body at one end of the recess 4', the outer surface of said block 11 is in alinement with the outer edge of the shuttle body. A locking lever or arm 12, having on its free end an offset portion 12', has its hub 12'' pivotally mounted on a stud 13, secured in this instance on a boss on the rear wall of the stationary shuttle box 3. The locking lever or arm 12 extends in an opening 3' in the rear wall of the shuttle box, see Fig. 3, and is adapted to enter into the recess 4' in the rear side of the shuttle body 4, as shown in Fig. 2, and engage the block 11, and the offset end 12' engage the rear wall of the shuttle box. Extending out from the hub 12'' is an arm 14. A helically coiled contraction spring 15 is attached at one end to the arm 14 and at its other end to a lug 3'' on the rear wall of the stationary shuttle box 4. The arm 14 has a hole therethrough, through which loosely extends a rod or wire 16. At the outer end of the wire or rod 16 is a collar 17, which is adjustably secured thereto by a set screw 18. The inner end of the rod 16 has in this instance an eye 16' thereon, which is pivotally connected to a pin 19 on an arm

20 extending out from the hub 20', which hub is pivotally mounted on a stud 21 carried in a lug 3''' on the rear wall of the shuttle box 3.

5 A second arm 20'' extends out from the hub 20', with its end in this instance in the path of the inner end of a spring actuated pin 22, which has bearings 23' in a stand or bracket 23 on the rear of the lay. A  
10 helically coiled expansion spring 24 bears at one end against the inner bearings 23' and at its outer end against a pin 22' in the pin 22, and acts to move outwardly said pin 22. The outer end of the pin 22 extends  
15 in the path of and is adapted to be engaged by the end of an arm 25, in this instance secured upon the lay crank connector 9, see Fig. 1.

The operation of my improvements, from the above description in connection with the drawing, will be readily understood by those skilled in the art.

When the shuttle has entered the shuttle box and has reached its outward position  
25 shown in Fig. 2, the locking arm or lever 12, through the action of the spring 15, will move said locking arm or lever through the opening 3' in the rear wall of the shuttle box 3, and into the recess 4' in the rear side  
30 of the shuttle 4, and cause said locking arm or lever 12 to engage the block 11 in the rear side of the shuttle, as shown in Fig. 2, to lock or hold the shuttle against the picker 6. The locking lever 12 will remain in its locking  
35 position during the forward movement of the lay, and during the first part of the backward movement of the lay. On the continued backward movement of the lay, the crank shaft 10 revolving in the direction  
40 indicated by arrow *x* in Fig. 1, will raise the crank connector 9 at its outer end, and the raising of the crank connector 9 at its outer end, will move the arm 25 toward the lay, and the engagement of said arm with  
45 the outer end of the spring actuated pin 22, will move inwardly said pin, against the action of the spring 24, and through the engagement of the inner end of the pin 22 with the arm 20'', will rock said arm and move  
50 it inwardly, and also move the arm 20, and through the connector 16 and collar 17 thereon, move the arm 14, and also move the locking arm or lever 12 outwardly and away from the shuttle, to disengage it from the  
55 shuttle, as shown in Fig. 3, and leave the shuttle free to be picked. In the continued rotation of the crank shaft 10, and the lowering of the crank connector 9 at its outer end, the arm 25 on said crank connector will  
60 be moved away from the spring actuated pin 22, and allow the spring 24 to act, to move outwardly said pin, and leave the spring 15 free to act to return the parts of

the lock mechanism to the position shown in Fig. 2, so that on the next boxing of  
65 the shuttle, the locking arm or lever 12 will enter the recess 4' in the rear wall of the shuttle 4, to again lock the shuttle in position.

It will be understood that the details of  
70 construction of my improvements may be varied if desired. The essential feature of my improvements is the connection of the shuttle locking lever, through intermediate  
75 connections, with some moving part of the loom, preferably the lay, to automatically move the locking lever or arm at the proper time out of its operative position, and into its inoperative position, and then to allow  
80 the locking lever or arm to return into its operative position, after the shuttle has been thrown from the box.

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

1. In a shuttle lock mechanism for a loom, a device for entering an opening in the shuttle box and engaging the shuttle, yielding means for moving said device to cause it to engage the shuttle, an arm on the lay  
90 crank connector, and means, intermediate said device and said arm, to disengage said device from the shuttle.

2. In a shuttle lock mechanism for a loom, a lever or arm, pivotally mounted at the rear  
95 of a shuttle box, and adapted to enter through an opening in the shuttle box and engage the shuttle, a spring for yieldingly moving said arm to cause it to engage the shuttle, a connection from said arm to a  
100 second arm, pivotally mounted at the rear of the shuttle box, and said second arm, a longitudinally moving pin intermediate said second mentioned arm and an arm on the lay crank connector, and said last-mentioned  
105 arm and crank connector.

3. In a loom, the combination with a shuttle having a recess on the rear surface thereof, and a block or bearing surface secured in said recess, of a lock device for  
110 entering said recess and engaging said block, to hold the shuttle in its outer position and prevent the rebound thereof, said device comprising a lever or arm pivotally mounted at the rear of the shuttle box, and adapted  
115 to enter through an opening in the shuttle box, and means for yieldingly moving said lever or arm into operative position, and connections intermediate said lever or arm and the lay crank connector, to disengage  
120 said lever or arm from the shuttle.

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