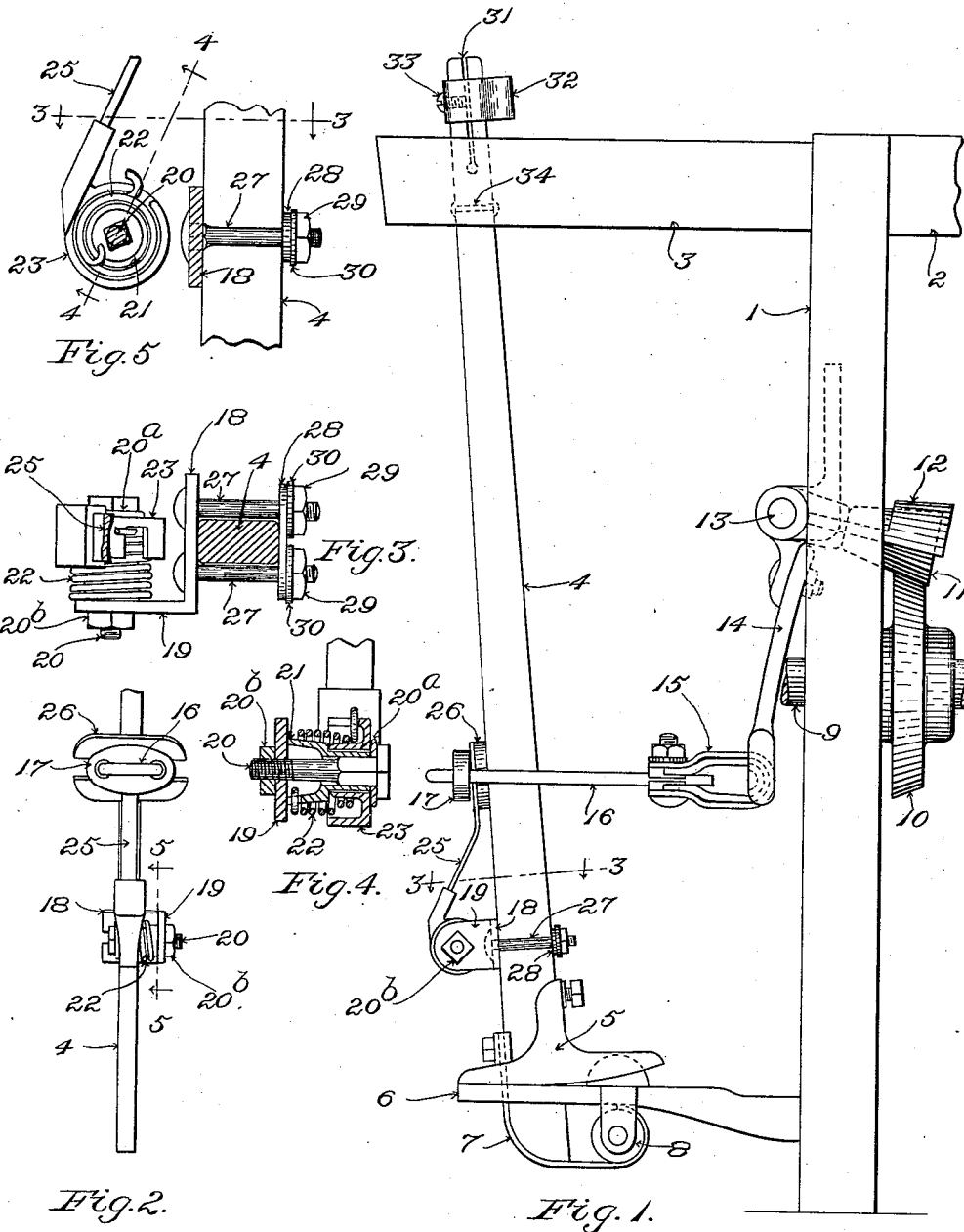


M. M. LAHUE.
PICKING MECHANISM FOR LOOMS.
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UNITED STATES PATENT OFFICE.

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PICKING MECHANISM FOR LOOMS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MOSES M. LAHUE, a citizen of the United States, residing at Lowell, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Picking Mechanisms for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in a device of novel character which operates to take up slack in the connections between a picker-stick and its actuating picking-cam; also, to hold or support the outer end of the lug-strap at the proper height in connection with the picker-stick, and with capacity for adjustment up or down as required in order to get a pick of proper character; also, to check the shuttle with yielding force as it completes its entrance into the shuttle-box; also, to cushion the force by which the picker-stick is actuated for the purpose of throwing the shuttle.

The invention is illustrated in a convenient form of embodiment in the drawings, in which latter, Figure 1 shows in front elevation certain parts of a loom with the said embodiment of the invention applied thereto. Fig. 2 is an elevation from the left-hand side of the lower portion of the picker-stick and the parts in connection therewith. Fig. 3 is a detail view on line 3, 3, of Figs. 1 and 5 on an enlarged scale. Fig. 4 is a view in section on line 4, 4, of Fig. 5. Fig. 5 is a view in section on line 5, 5, of Fig. 2.

One of the sides of the frame of a loom is shown at 1, a portion of the breast-beam being represented at 2, and at 3 is shown the outwardly projecting portion of the lay-beam on which in practice is located the shuttle-box belonging to the side of the loom which is partly shown in the drawings. A picker-stick is shown at 4, and its rocker at 5. The outwardly extending stand which projects from the rockshaft of the lay, and on which the rocker is mounted, is shown at 6, and at 7 is the strap connecting the rocker and base of the picker-stick with the barrel 8 of the rocker-spring. At 9 is a portion of the cam-shaft of the loom, and at 10 is one of the picking tappets on the said shaft. At 11 is a picking-ball or cone mak-

ing contact with the periphery of the picking tappet 10 and carried by the arm 12 of the picking rockshaft 13. The said rockshaft has the picking arm 14 in engagement with the loop 15 forming the inner member of the lug-strap. The wire loop constituting the outer member of the said lug-strap is shown at 16. The loop 16 encircles the picker-stick 4 in usual manner and carries the block 17 for transmitting to the picker-stick the motion by which the shuttle is thrown. As thus far referred to, the parts are as heretofore, and the construction may be varied in practice as may be desired.

In carrying my invention into effect, I mount upon the picker-stick 4 a small stand 18, which is formed with an ear 19 having a hole through which passes a bolt 20. A spring barrel 21 is mounted upon the bolt at one side of the ear, and is held in place thereon by means of a washer 20^a at the outer end of the barrel, and a nut 20^b. The bolt is squared for a portion of its length, and the squared portion occupies a squared portion of the bore of the barrel. Thereby the barrel and bolt are prevented from turning relative to each other. The nut is tightened up so as to clamp the barrel and ear tightly together, and thereby the barrel after being set properly to cause the spring to act with the required tension, is fixed in position and prevented from accidental turning, so as to relax the spring. The barrel is encircled by the coil-portion of a spring 22, one end of the wire of said coil being engaged with the barrel as shown in Fig. 4, and the other, as shown in Fig. 3, with a hub 23 which is mounted to turn loosely on a portion of reduced diameter of the spring barrel, between a shoulder of the latter and the washer 20^a. The hub 23 carries an upwardly extending arm 25 furnished with a pad 26, which may be of leather, to make contact with the outer edge of the picker-stick. The upper portion of the arm 25, and the said pad, intervene between the block 17 and the picker-stick. The pad is notched at its opposite sides, the notches receiving the side-arms of loop 16. The stand 18 is secured in place upon the picker-stick by bolts 27 passing through the body-portion of the stand and extending at

opposite sides of the picker-stick, the stems of the said bolts receiving at the inner edge of the picker-stick a transverse plate 28 making contact with the said inner edge.

5 By means of nuts 29 and washers 30 upon the threaded portions of the bolts the base of the stand and the plate are drawn together, so as to clamp the picker-stick between them, and thereby secure the stand

10 firmly in place upon the picker-stick at the desired height. The stand and arm are pivotally mounted thereon as just described and serve to support the outer portion of the loop 16, and they thereby determine the

15 height of the said loop with reference to the picker-stick. By shifting the stand up or down upon the picker-stick, which may be accomplished by loosening nuts 29, then moving the stand upon the picker-stick in the required direction, and then tightening

20 up the said nuts again, the height of the loop 16, and consequently of the place at which the lug-strap connects with the picker-stick may be adjusted as required.

25 The tension of the spring 22 is exerted in a manner tending to separate the arm 25 from the picker-stick by an outward movement of the arm relative to the picker-stick, and through the outward pressure of the up-

30 per extremity of the said arm against the block 17 an outward pull is transmitted to the lug-strap. This pull operates to take up slack in the connections between the picker-stick and the picking tappet, by acting

35 through the picking arm 14 with a tendency to turn the picking rockshaft 13 and its arm 12 in the direction to press the picking ball or cone 11 against the periphery of the picking tappet 10. The rocker-spring at 8 is the

40 stronger and after a picking movement of the picker-stick operates to return the latter outward to its normal position shown in Fig. 1, the spring 22 yielding to permit this, but continuing to keep the slack, aforesaid,

45 taken up. The spring 22 acts at all times with a tendency to hold the picking ball or cone 11 in contact with the said periphery of the picking tappet, so that in the rotation of the picking tappet the picking ball or cone

50 shall always roll thereupon, distributing around the entire periphery of the picking tappet the oil which is employed for lubrication, and in addition causing the picking-nose of the tappet to press the picking ball

55 or cone 11 and the arm 12 upward with an easy and gradual action, giving a picking action which is free from the hammer-like blow which occurs in case the picking ball or cone stands normally separated from the pe-

60 riphery of the picking tappet until it is suddenly struck by the projecting nose of the latter. By having all slack in the connection between the picking tappet and the picker-

stick kept constantly taken up by the action of the spring-actuated arm, the undesirable 65 hammer-like blow is further obviated, and an easy picking action like that due to the operation of a crank is secured. When the nose of the picking tappet acts against the ball or cone 11, the inward pull transmitted 70 through the lug-strap acts to swing the arm 25 inward toward the picker-stick; the rocker-spring at 8 holding the picker-stick in its position shown in Fig. 1 until the block 17 and pad 26 bring up solidly against 75 the outer edge of the picker-stick, when the picking movement of the latter begins. After the pick, the rocker-spring at 8 moves the picker-stick outward into its normal position again. When, now, the shuttle in its 80 return flight across from the other side of the loom, passes into the shuttle-box and its tip encounters the picker, the spring 22 yields, with the result that the shuttle is brought to a state of rest through the action 85 of a yielding resistance.

A spring or yielding action of the picker-stick itself is secured by forming an open cut or kerf 31 in the upper end of the picker-stick, as shown in Fig. 1, the opposite walls 90 of the cut or kerf being separated so as to leave the separated portions of the stick more or less free to move toward each other. I have shown applied to the picker-stick a picker 32 of a well-known type in general 95 use having a loop which encircles and fits the split or divided upper end of the picker-stick. The upper portion of the picker-stick is tapered, as usual, so that the picker wedges tightly thereon, and the picker is held in 100 place by an ordinary screw or tack, 33. The portion of the picker-stick at the inner side of the slot or kerf forms a spring which yields when the picker receives the blow of the tip of a shuttle entering the shuttle-box 105 at the end of its flight. Thereby a yielding shuttle-checking action is secured, and the picker is spared the effect of the character of blow which it would receive if solidly held or backed up. The life of the picker is very 110 much prolonged in consequence of the reduction in the rate of the wear of the same. To prevent the picker-stick from splitting lengthwise, I reinforce the same below the lower end of the slot or kerf by means of a 115 rivet 34 which passes through the stick, edge-wise of the latter.

I claim as my invention:—

In picking mechanism for looms, the combination with the picker-stick and the lug- 120 strap, of a stand secured to the picker-stick, a spring-actuated member carried by said stand, engaging with the lug-strap and supporting the same, and tending to produce outward movement of the lug-strap relative 125 to the picker-stick, a hub with which the

actuating spring for the said member is
connected, and a bolt applied to said stand,
supporting the said hub and in positive en-
gagement therewith, rotary adjustment of
5 said bolt effecting similar adjustment of the
hub and thereby adjusting the tension of the
said spring.

In testimony whereof I affix my signature
in presence of two witnesses.

MOSES M. LAHUE.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."