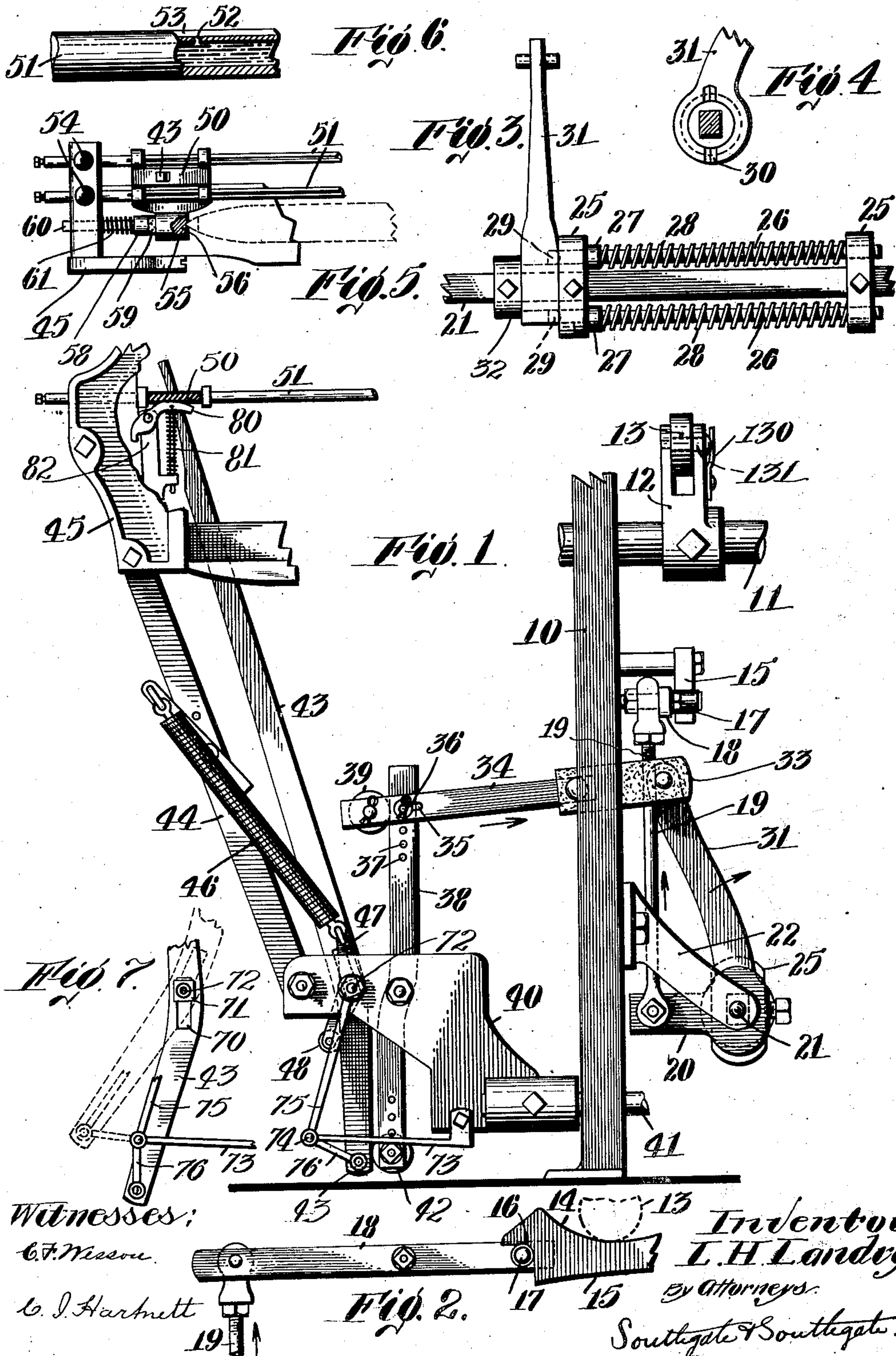


L. H. LANDRY.
PICKING MOTION.
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943,027.

Patented Dec. 14, 1909.



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PICKING-MOTION.

943,027.

Specification of Letters Patent.

Patented Dec. 14, 1909.

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To all whom it may concern:

Be it known that I, LOUIS H. LANDRY, a citizen of the United States, residing at Uxbridge, in the county of Worcester and State of Massachusetts, have invented a new and useful Picking-Motion, of which the following is a specification.

This invention relates to a picking motion suitable for looms for weaving all kinds of fabrics.

The principal objects of the invention are to provide a construction which can be applied to all kinds of looms and which is so constructed that it will be greatly simplified, and the expense of manufacturing correspondingly decreased; also to provide a construction in which the repairs will be so materially lessened that a loom fixer can keep several additional looms in repair; which will be capable of operating at a higher speed than has heretofore been obtained, and in which the shuttle driver will push the shuttle out of the box in a rectilinear manner.

Some of the above named objects are secured largely in providing a construction in which substantially no leather or wood is used, the picker-strap, raw-hide picker, picker-stick, sweep-stick, sweep-strap, power-strap, and heel-strap, as these parts are now known in looms, being entirely done away with, and no straps being required except the harness strap and driving strap. In the place of these features, parts are employed which do not wear out and break as rapidly as the leather and wooden parts.

The invention also involves an improved construction in which the picker-roll is mounted directly on the main shaft so as to simplify the construction of the connected parts for operating the sweep arm.

Another feature of the invention consists in the provision of means whereby if the shuttle driver is caught in the box either over or under the shuttles, a checking tension let-off motion will operate automatically to stop the shuttle driver and prevent the breakage thereof, or of any of the connected parts.

Another feature of the invention consists of a positive self-oiling guide for the picker for giving the above mentioned rectilinear

motion which, like the rest of the mechanism, can be attached to any form of lever, and is of universal application, and an important feature is the provision of means whereby the wear on the picker due to the rubbing action thereof will be substantially eliminated.

The invention also embodies other improvements in the details of the picker and shuttle driving mechanism as will appear hereinafter.

Reference is to be had to the accompanying drawings which illustrate one form of the invention, and in which,

Figure 1 is a front elevation of a practicable form of the picking mechanism with the other parts of the loom omitted; Fig. 2 is a fragmentary end view showing the operation of the picker roll; Fig. 3 is an elevation of the picking shaft and connected parts looking at it from the inside of the loom; Fig. 4 is an end view of a portion of the sweep arm showing the shaft in section; Fig. 5 is a plan of the shuttle box guide and picker; Fig. 6 is a sectional view of one of the self-oiling guides; and, Fig. 7 is a front view with the parts in another position.

For the purpose of accomplishing the above mentioned results and others which will appear hereinafter, the invention is shown in a simple form in which it can be applied to looms of substantially all types, whether for weaving cotton, woolen or other fabrics, and which involves a frame which may be of ordinary construction. This frame supports the main shaft 11 on which is directly mounted a picker roll extension 12 carrying the picker roll 13 held in place by a flat spring 130 engaging a slot in the end of the stud 131. This picker roll is designed to come in contact with the upper curved cam surface 14 of a lever 15 so as to depress the outer end of said lever during each rotation of the main shaft. The lever 15 is provided with a notch 16 in the end thereof for engaging a roll 17 on a lever 18. Both the levers 15 and 18 are shown as pivoted on axes parallel to the axis of the main shaft. Through a connecting rod 19 the lever 18 operates an arm 20 on the picking shaft 21 so as to oscillate said

shaft once during each complete rotation of the main shaft. The picking shaft is mounted in bearings on brackets 22 fixed to the inside of the frame and extends along the inside thereof transverse to the axes of the main shaft and levers. It will be seen that the operation of the picking shaft 21 is positive and that it must oscillate every time the main shaft rotates. Consequently, if anything should occur to stop the picker-lever, something might break. In order to avoid this the picker shaft is provided with a pair of brackets 25 in which slide one or more rods 26 having collars 27 thereon and springs 28 for forcing them in one direction. These rods are provided with beveled ends 29 fitting correspondingly shaped depressions 30 in the hub of the sweep arm 31 which is loosely mounted on a collar 32 on the picking shaft. From this construction it will be seen that, the springs 28 being of sufficient rigidity, the motion of the picking shaft will be transmitted to the sweep arm under all ordinary conditions, but in case of extraordinary resistance, the ends of the rods 26 will be pushed out of the depressions 30 and the shaft 21 can then oscillate without breaking the parts which are connected with it.

The picking sweep arm 31 is connected by means of a flexible leather strap 33 with a sweep rod 34, which is provided with a slot 35 for receiving a pin 36 which can be mounted in any one of a series of perforations 37 in the sweep check lever 38. A roll 39 is mounted on the sweep rod to bear on the sweep check lever to reduce friction. The sweep check lever is pivotally mounted on a bracket 40 which is fixed to the rock shaft 41, which is connected with the lay and oscillates therewith. At the bottom of the sweep check lever is a roll 42 which is adjustably mounted thereon and which engages the bottom of the picker-lever 43, which, like the rest of the parts, preferably is made of metal. The bracket 40 movably carries the lever 43 which is arranged to have a compound movement at the bottom to permit its upper end to move the picker without having a rubbing action thereon. For this purpose it is provided with a longitudinal slot 70 in which is located a block 71, through which passes a stud 72 on the bracket 40. Fixed to the bracket is a link 73 which is connected with a pin 74 to which are pivoted links 75 and 76. The link 75 is connected with the stud 72 and the link 76 with the lower end of the picker lever. Consequently the operation of the roll 42 on the lever 43 will cause the latter to fall and rise at the bottom to compensate for the opposite motion at the top. This keeps the top in fixed relation to the picker and prevents rubbing.

The bracket 40 has a brace 44, which sup-

ports a box guide 45, not shown completely herein, as any ordinary form of box guide can be employed. To the brace 44 is connected one end of a spring 46, the other end of which is connected with a lever 47 pivoted on the axis on which the picker lever is pivoted, and having a roll 48 for engaging the latter to normally force it back, and also to swing the sweep check lever and picking sweep arm in opposition to the action of the picker roll. It is this spring which turns the picking shaft after it has been oscillated by the picking roll. The picker lever extends upwardly into the picker 50, which is mounted to slide on one or more guide rods 51. These are preferably made hollow as indicated in Fig. 6, and have openings 52 therein, and a slot 53 in the top communicating with said openings. Oil cups 54 are mounted on the box guide communicating with the interior of these guide rods, so that the rods and their grooves are constantly self-lubricated.

To relieve the frame of the jar due to the outward stroke of the picker lever a brake is provided, comprising a lever 80 in position to be engaged by the picker, and normally pressed up by a spring 81. This lever is shown as mounted on the brackets 82 which carry the rods 51.

The picker is provided with a cylindrical metallic shell 55 projecting from it, and having a plug 56 therein for receiving the end of the shuttle. Behind this shell and fixed on the shuttle check 58 is a bunter 59 for receiving the shell as it comes back. The shuttle check is mounted on a rod 60 and is provided with a spring 61 for an obvious purpose.

It will be seen that the embodiment of the invention which has been described is of such a nature as to show that this invention is applicable to all styles of looms, and that it embodies features which render it more durable than anything heretofore known in the art for this purpose, and also that the other advantages which have been referred to herein can be obtained in a simple and convenient manner.

While I have illustrated and described one embodiment, of the invention, I am aware that many modifications may be made therein by any person skilled in the art, and that it may be applied in many other ways without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction shown, but

What I do claim is:—

1. In a picking motion, the combination of a rocking picking shaft, a sweep arm loosely mounted thereon and having a plurality of depressions, two brackets fixed to said picking shaft and having perforations in alinement, a plurality of rods slidably

mounted in the perforations in said brackets and each having a beveled end projecting into a depression in the sweep arm, a spring surrounding each rod and bearing on one of the brackets for normally holding said rods in said depressions to connect the picking shaft with the sweep arm and transmit power thereto but capable of yielding in case of excessive strain to permit the rods to withdraw from the depressions, whereby the picking shaft can then turn without operating the sweep arm.

2. In a picking motion, the combination with a picking shaft, of rods slidably mounted thereon and having beveled ends, springs for holding said rods forward, a sweep arm loosely mounted on the picking shaft and having depressions of the same shape as said ends for receiving them.

3. In a picking motion, the combination with a rocking sweep arm, of a sweep check lever pivoted near the center thereof, a sweep rod connected with the sweep arm and having roller connection with the sweep check lever on one end thereof, and a picking lever connected with the other end of the sweep check lever and pivoted at a point higher than the end of the sweep check lever with which the picker lever is connected.

4. In a picking motion, the combination with a rocking sweep arm, a pivoted sweep check lever, a sweep rod adjustably connected with the top of the sweep check lever, a roller mounted at the bottom of the sweep check lever, and a picker lever adapted to be operated by said roller and pivoted at a point substantially between the top and bottom of the sweep check lever.

5. In a picking motion, the combination of a pivoted sweep check lever, means for operating the sweep check lever connected therewith, a roller mounted at the bottom of the sweep check lever, and a picker lever pivoted above the bottom of the sweep check lever and in position to be operated at its lower end by the roller thereon.

6. In a picking motion, the combination with a rocking sweep arm, of a pivoted sweep check lever, a sweep rod adapted to be adjustably connected with the sweep check lever and having a roller constituting a bearing on the sweep check lever, a roller adjustably mounted at the bottom of the sweep check lever, and a picker lever adapted to be operated by the last named roller.

7. In a picking motion, the combination with a loom frame, of a picking shaft journaled thereon, a sweep arm mounted on the picking shaft, a rock shaft for the lathe, a bracket fixed to said rock shaft outside the frame and swinging therewith, a sweep check lever pivoted on the bracket, a sweep rod connected with the top of the sweep check lever and having a flexible connection with the sweep arm, and a picker

mounted on said bracket and operated by the sweep check lever.

8. In a picker motion, the combination with a loom frame, of a picking shaft journaled thereon, a sweep arm mounted on said picking shaft, a bracket outside of the frame, a sweep check lever pivoted on the bracket, a sweep rod connected with the sweep check lever and flexibly connected with the sweep arm, and a picker lever mounted on said bracket and operated by the sweep check lever.

9. In a picking motion, the combination of an oscillating bracket, a sweep check lever pivoted thereon, a picker lever supported on the bracket, the lower ends of said levers engaging each other so that the sweep lever will operate the picker lever, and a spring connected with said bracket for yieldingly moving the lower end of the picker lever toward the sweep check lever.

10. In a picking motion, the combination of an oscillating bracket, a picker lever supported thereon, means on the bracket for operating the picker lever, a box guide supported above said bracket and swinging therewith, a spring moving with the bracket and extending downwardly from a position below the box guide, and a lever on the bracket connected with said spring and engaging the picker lever to normally move it back.

11. In a picking motion, the combination of an oscillating bracket, a sweep check lever pivoted thereon, a picker lever pivoted on the bracket, both of said levers extending below the bracket and the lower ends of said levers engaging each other, whereby the sweep check lever will operate the picker lever.

12. In a picking motion, the combination of an oscillating bracket, a picker lever supported thereon, a spring moving with the bracket, and a lever on the bracket connected at one end with said spring and its other end engaging the picker lever to normally return it to a certain position.

13. In a picking motion, the combination of a bracket, a picker lever pivoted thereon, a lever pivoted on the bracket to swing on the same axis as the picker lever and having means for engaging the picker lever, and a spring for holding said second lever in position to engage the outer side of the picker lever below its pivot on its outward stroke.

14. In a picking motion, the combination of an oscillating bracket, a sweep check lever pivoted thereon, a picker lever supported on the bracket, the lower ends of said levers engaging each other, whereby the sweep check lever will operate the picker lever, and means whereby the picker lever is moved vertically as it swings to keep its upper end moving in a horizontal line.

15. In a picking motion, the combination of a stud, a picker lever having a slot movable on the stud, and means for swinging and reciprocating the lever comprising a fixed stud, and links connecting said fixed stud with the first named stud and with the bottom of the lever.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

LOUIS H. LANDRY.

Witnesses:

ADOLPHE H. LANDRY,
WM. J. TAFT.