No. 713,035. Patented Nov. 4, 1902.

H. WILDE.

OSCILLATING LEASE ROD FOR LOOMS.

(Application filed Apr. 5, 1902.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

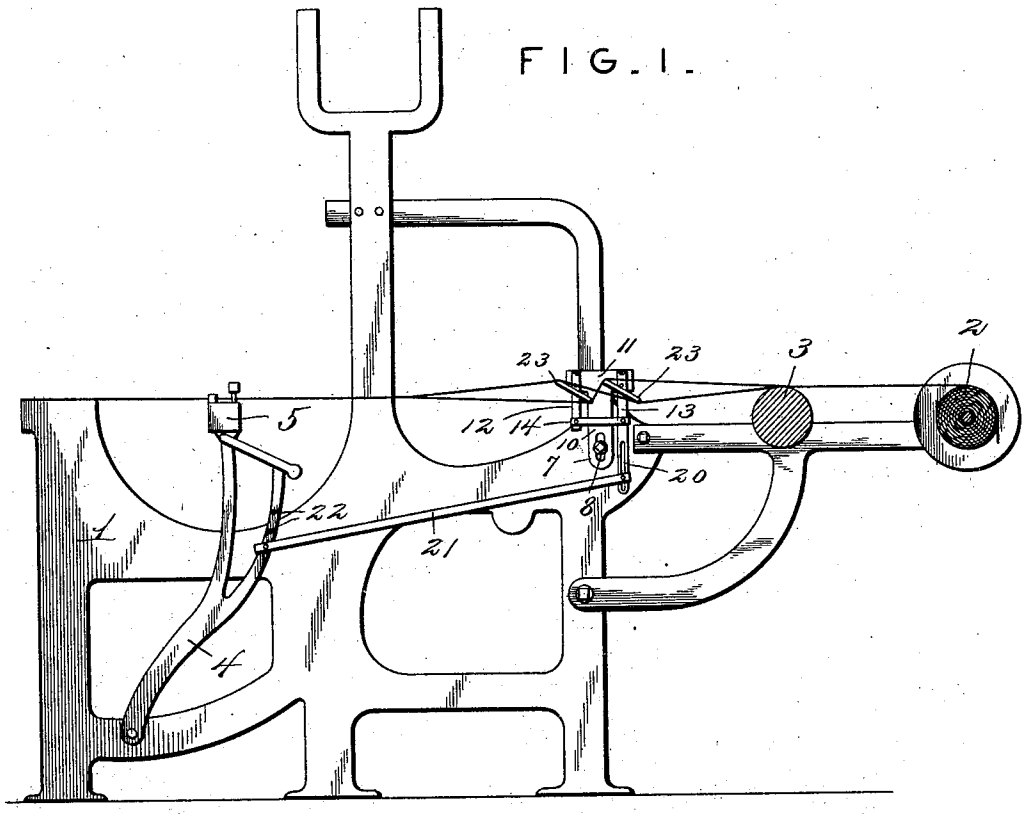

FIG. 4.

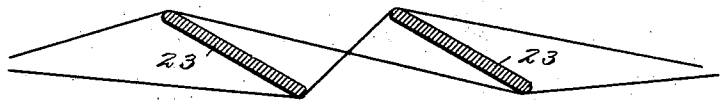

FIG. 5.

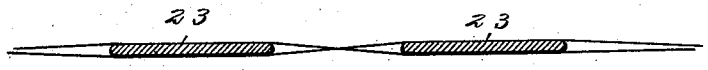

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FIG. 2.

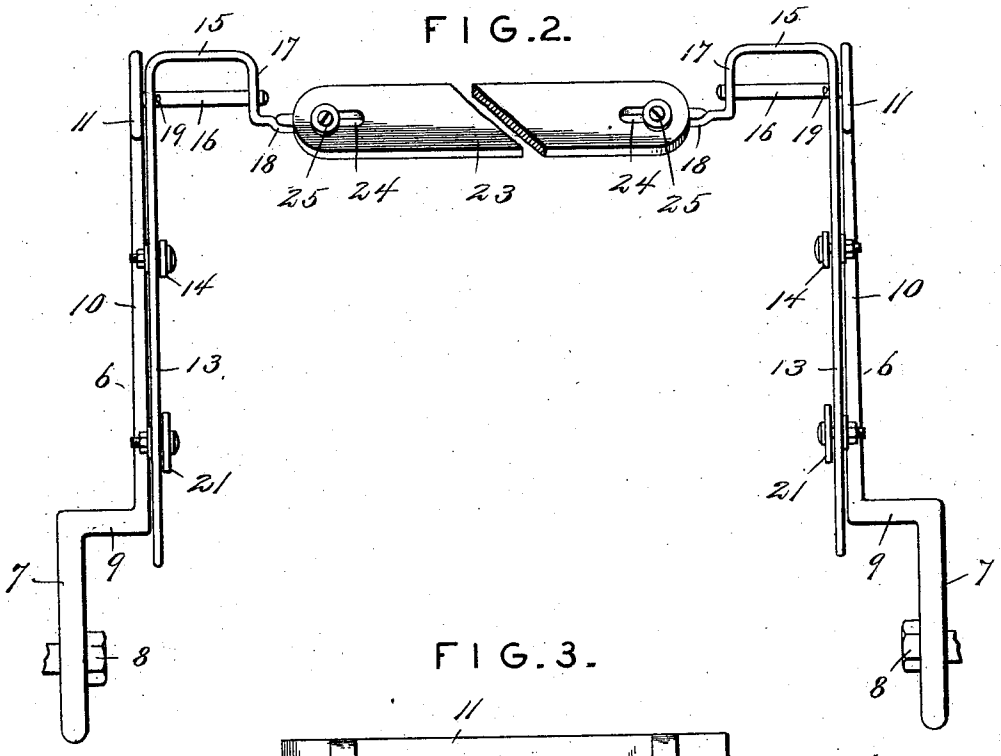
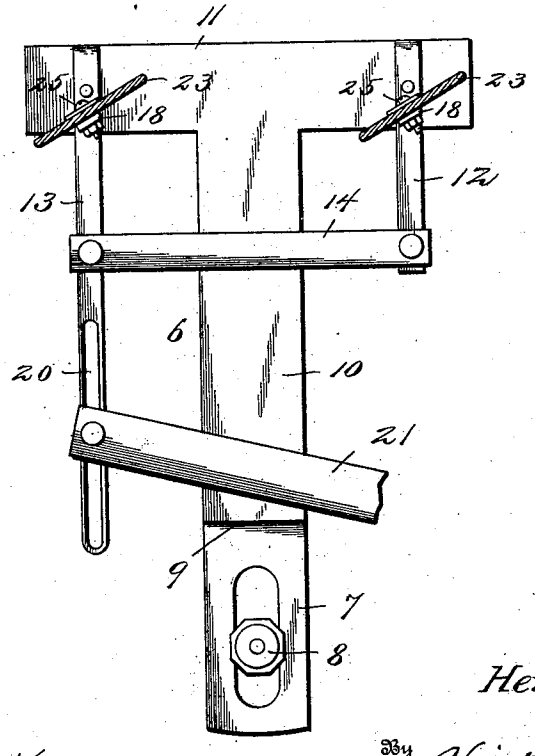


FIG. 3.



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UNITED STATES PATENT OFFICE.

HENRY WILDE, OF NEW LONDON, CONNECTICUT, ASSIGNOR OF ONE-HALF TO BENJAMIN L. ARMSTRONG, OF NEW LONDON, CONNECTICUT.

OSCILLATING LEASE-ROD FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 713,035, dated November 4, 1902.

Application filed April 5, 1902. Serial No. 101,565. (No model.)

To all whom it may concern:

Be it known that I, HENRY WILDE, a citizen of the United States, residing at New London, in the county of New London and State of Connecticut, have invented new and useful Improvements in Oscillating Lease-Rods for Looms, of which the following is a specification.

This invention relates to lease-rods for looms, and particularly to means for individually and simultaneously oscillating the said rods in timed relation to the movements of the lathe and swords. Lease or cross rods as at present employed are generally round in cross-section. It is well known that if flat rods could be employed a great advantage in all kinds of weaving would be derived, as such form of rods would cause less strain on the harness and warp during the crossing of the warp on the rods. The reason that flat rods have not heretofore been used is because they do not spread the warp-threads sufficiently to keep them open or separated from each other during certain weaving operations. Hence round rods have been almost universally used, notwithstanding the disadvantages in connection with the same. The use and function of lease-rods in all the finer grades of weaving will be readily appreciated by those skilled in the art, and it is also well known that there is a great strain on the warp and harness during the crossing of the warp on the lease-rod.

The present invention embodies flat lease-rods having oscillating mechanism connected thereto and so operating that the rods will be flat at the time that the harness and warp are open for the passing of the shuttle through the shed, and thereby reduce the strain on the warp and harness to a minimum. By tilting or disposing the flat lease-rods at an angle to a horizontal plane as the harness comes together will spread or open the warp and establish a more even tension on the latter. The improved flat lease-rods having the oscillating movement set forth will also prevent the warp-threads from sticking when in close relation, and thereby enable a weaver to produce more and better work within a given time. Furthermore, in the operation of the device the movable parts usually included in a loom organization are utilized to actuate the lease-rods proportionately, and means for attachment are also provided whereby certain conditions and special applications may be compensated for and accommodated.

In the drawings, Figure 1 is a longitudinal vertical section of a portion of a loom, showing the improved lease-rods and operating mechanism therefor applied thereto. Fig. 2 is an end elevation of the improved lease-rod mechanism, showing one of the rods. Fig. 3 is an enlarged longitudinal vertical section through the improved lease-rod mechanism, showing the rods in section and the remaining parts in elevation. Fig. 4 is a diagrammatic view embodying the improved lease-rods and warp-threads and showing the rods disposed at an angle. Fig. 5 is a diagrammatic view showing the lease-rods in horizontal planes.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a loom-frame of any usual or ordinary construction supporting at the rear a warp-beam 2 and whip-roll 3 and at the front provided with the usual sword 4 and lathe 5. The harness has been omitted for the sake of clearness, and, further, because any of the well-known forms of this mechanism are adapted to be used in connection with the improved attachment.

The improved attachment comprises a pair of brackets 6, having lower slotted extremities 7 to receive securing-bolts 8 for adjustably attaching the said brackets to the inner opposing sides of the opposite portions of the loom-frame, the said brackets being arranged in transverse alinement. The extremities 7 continue into inwardly-extending angular offsets 9, having arms 10 rising therefrom and provided with horizontally-disposed T-heads 11. Each bracket and the mechanism in connection therewith is the same on opposite sides of the loom and a description of one will suffice for both. Pivoted on the inner side of the opposite extremities of the T-head 11 are depending oscillating bars 12 and 13, the bar 12 being considerably shorter than the bar 13 and both bars attached for simultane-

ous and equal movement by an actuating bar or rod 14, which has its opposite ends pivotally secured to the said bars 12 and 13. The upper end of the bars 12 and 13 are projected inwardly and given an arcuate formation, as at 15, to provide two points of bearing, the pivot-rods 16 for the upper ends of the bars 12 and 13 being long enough to pass through inner depending members 17 of the upper arcuate ends 15, and from the said members 17 attaching-terminals 18 project and are given a quarter-twist to dispose them at a normal angle of inclination. The upper arcuate ends or extremities 15 of the bars 12 and 13 are prevented from moving inwardly for a predetermined distance on the pivot-rods 16 by stop projections 19 on the said rods. The arcuate end formation just described permits the use of light material in the construction of the bars 12 and 13 and at the same time provides the necessary bearing and strength as well as positive position and accurate retention of the said bars during their oscillating movement.

The lower extremity of the bar 13 is formed with an elongated slot 20, and thereto is adjustably attached the rear end of a pitman 21. This pitman can be operated by several parts of the loom; but the preferred member of the loom organization for effecting a regular reciprocation thereof is the sword 4, to which the forward end of said pitman is adjustably attached. It will be understood that this pitman will be duplicated on the opposite side and connected to the other sword, and to provide for the adjustment of the front ends of both pitmen a portion of the swords have openings 22 formed therein, whereby said pitmen may be raised or lowered to regulate the stroke and control the extent of movement of the bars 13 and the parts connected thereto.

The terminals 18 of the bars 12 and 13 have the opposite ends of lease-rods 23 adjustably connected thereto, the opposite ends of the said rods being formed with slots 24, through which adjusting-bolts 25 are passed and carried by the said terminals 18. The lease-rods 23 are made adjustable to accommodate variations in the transverse extent of the warp-threads as well as the position of the said threads in relation to the loom mechanism. In other words, the improved attachment as an entirety through the medium of the slotted lease-rods is adapted to be applied to looms varying in width. It will also be seen that the upper arcuate extremities 15 of the bars 12 and 13, together with the inwardly-projecting terminals 18, properly position the lease-rods in the center of the loom, and in view of the inclination of the terminals 18 the said lease-rods are similarly inclined and are normally held at an oblique angle to a horizontal plane and parallel. The present form of lease-rod is flat and constructed of suitable thin material with upper and lower parallel sides. The use of this flat lease-rod is permitted and rendered effective by the oscillating devices connected thereto and which operate to change the angle of the said rods proportionately to the movement of and in timed relation to the swords 4.

In the operation of the improved attachment the rearward movement of the swords causes the lease-rods to be disposed in a horizontal plane, as shown by Fig. 5, this movement occurring at the time the harness and warp are open to produce the shed for the passage through the warp of the shuttle, and when the lease-rods are in a horizontal position the strain on the warp-threads is materially reduced in view of the reduced thickness of the lease-rods and a consequent reduction in the resistance imparted to the warp. As the swords move outwardly or toward the breast of the loom the lease-rods will be moved to an angular or inclined position, as shown by Fig. 4, to spread or open the warp as the harness comes together, thereby giving a more even tension on the warp. This operation of the lease-rods will prevent the warp-threads from sticking together and enable a weaver to produce a better quality of work.

Though the preferred form of the attachment has been shown and described, it will be understood that changes in the shape, proportions, dimensions, and minor details may be resorted to without departing from the principle of the invention.

Having thus fully described the invention, what is claimed as new is—

1. The combination in a loom, of a pair of lease-rods spaced apart from each other and held by independent devices, and means for simultaneously operating the said devices to equally and regularly oscillate the lease-rods.

2. The combination in a loom, of a pair of lease-rods normally held at an angle of inclination to a horizontal plane and out of alinement, and means for oscillating the said rods to equally and regularly move them into a horizontal plane and in alinement.

3. The combination of a pair of flat lease-rods, independent movable bars carrying said lease-rods and connected to each other, and means for operating the said bars to cause an oscillation of the lease-rods.

4. The combination of lease-rods spaced apart from each other in a horizontal plane, and means for individually and simultaneously oscillating the said rods to change their angle relatively to a horizontal plane.

5. The combination of a lease-rod having slotted extremities, movable supports to which said extremities of the lease-rod are adjustably connected, and means for actuating the said supports.

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

HENRY WILDE.

Witnesses:
LOUIS H. JONES,
C. S. BRADDOCK.