S. S. JACKSON.

WEFT REPLENISHING LOOM.

APPLICATION FILED FEB. 6, 1908.

951,246.

Patented Mar. 8, 1910.

Fig. 2

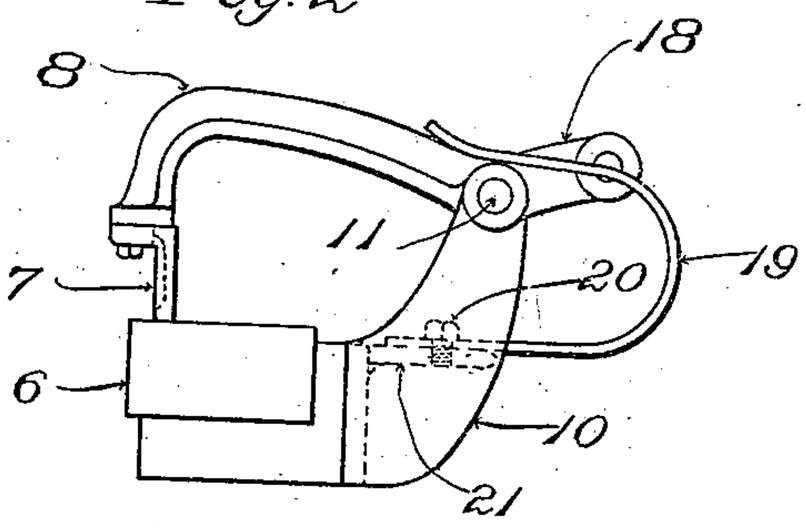


Fig. 3.

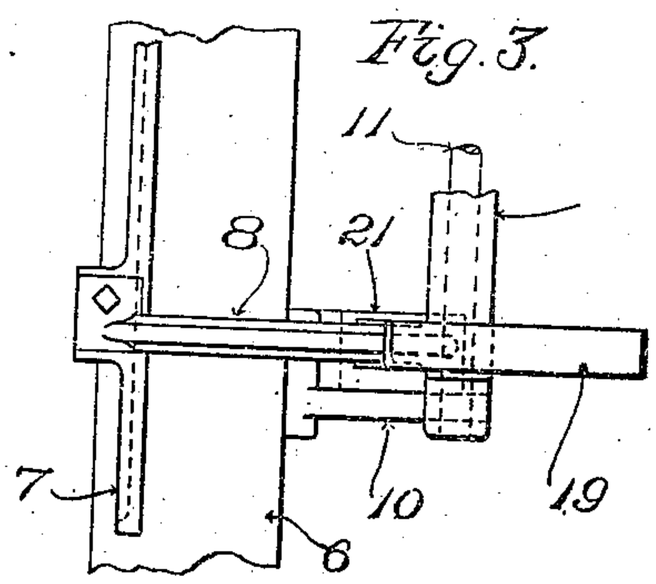
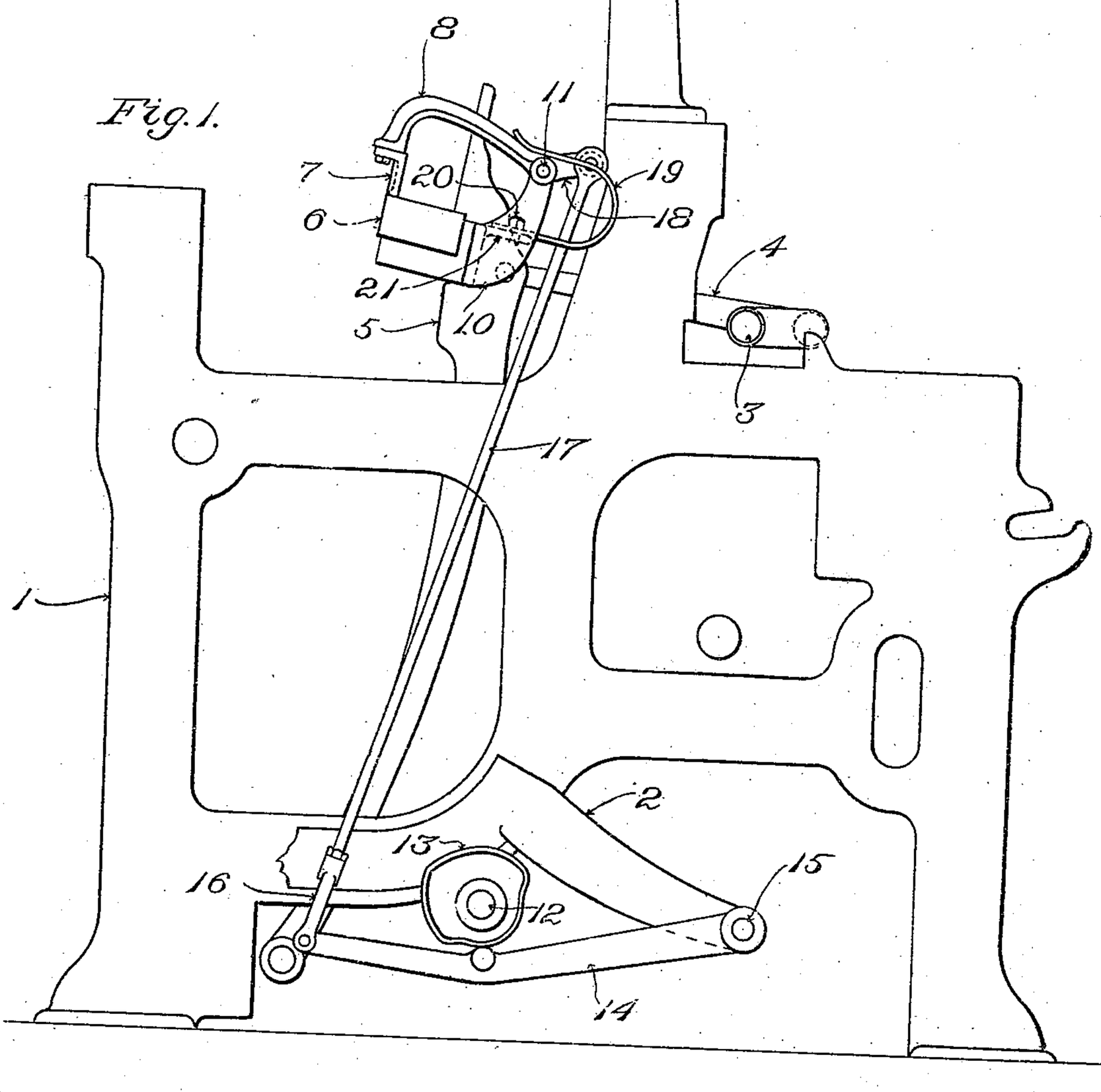


Fig. 1.



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UNITED STATES PATENT OFFICE.

SIMEON SCHOON JACKSON, OF READVILLE, MASSACHUSETTS, ASSIGNOR TO THE STAFFORD COMPANY, OF READVILLE, MASSACHUSETTS, A CORPORATION OF NEW JERSEY.

WEFT-REPLENISHING LOOM.

951,246. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed February 6, 1908. Serial No. 414,460.

To all whom it may concern:

Be it known that I, SIMEON SCHOON JACKSON, a subject of Great Britain, residing at Readville, in the county of Norfolk, State of Massachusetts, have invented a certain new and useful Improvement in Weft-Replenishing Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has relation to weft-replenishing looms of the class in which replenishment is effected by replacing the working shuttle on the lay by a fresh or reserve one.

More particularly the invention has relation to looms of the types in which the ejection or discharge of the working shuttle from the lay, and the feeding of the fresh or reserve shuttle to the lay to take the place of the former, are provided for by opening one or both shuttle-boxes of the lay by raising the front-plate or front-plates thereof, the closing being effected subsequently by the return of the elevated front-plate or front-plates to the normal position. Examples of looms in which this occurs are shown and described in the United States Letters Patent to H. I. Harriman, No. 626,834, dated June 13, 1899, and No. 636,228, dated October 31, 1899. In the said patents the ejection and discharge of the working shuttle and the feeding of the fresh shuttle are both performed at the feeding end of the loom, and accordingly the front-plate of the shuttle-box at that end is made vertically movable by being attached to the forwardly-extending arms of a rocker which is mounted in bearings at the rear of the shuttle-box. The rocker is actuated to move the rocker to raise the front-plate so as to open the shuttle-box at the proper times in the working of the loom by actuating devices in connection with the rocker, and is closed by gravity usually aided by a spring, one chief function of the latter being to hold the front-plate steadily in place in its closed position during the swinging movements of the lay. Heretofore the spring employed has been a spiral spring, one extremity thereof being engaged with one arm of the rocker or a projection therefrom, and the other extremity being engaged with a hook, stud, or the like, conveniently carried in fixed position on the lay.

The invention consists in a front-plate and its rocker having combined therewith a form of spring not heretofore used in such combination, and constituting an improvement upon the spring-arrangement heretofore used.

The invention is illustrated in the drawings, in which latter,—Figure 1 shows in side elevation portions of the frame and lay of a loom, a front-plate, rocker, and mechanism for actuating the rocker to raise the front-plate, with the invention applied. Fig. 2 is a detail view showing separately, the lay-beam, a bracket attached thereto, the rocker, front-plate, and novel spring in conformity with my invention. Fig. 3 is a plan of the parts shown in Fig. 2.

Having reference to the drawings, an end-frame of a loom is shown at 1, and at 2 is represented a portion of supplemental frame-work designed for the support of certain parts pertaining to the weft-replenishing mechanism. The crank-shaft is indicated at 3, one of the lay connecting-rods at 4, and one of the lay-swords at 5, the lay-beam being designated 6. The front-plate of the shuttle-box at the end of the loom which is represented in the drawings is designated 7, one of the rocker-arms to which it is attached being shown at 8, the rocker itself being marked 9, one of the rocker-supporting stands or brackets on the lay being designated 10, and the rod applied to the said stands or brackets and upon which the rocker is sleeved being shown at 11.

Fig. 1 shows one end of the change-shaft 12 and the devices intermediate the same and the rocker for operating the latter to raise the front-plate 7 for the purpose of opening the shuttle-box, such devices comprising the cam 13 that is fixed upon the change-shaft, the lever 14 actuated by the said cam and mounted upon the pivot 15 projecting from the supplemental framing 2, the connecting-link 16 having the lower end thereof joined pivotally to the forward extremity of lever 14, and the rod 17 having its upper end joined pivotally to the rearwardly projecting arm 18 of the rocker and the upper end of connecting-link 16 secured to its lower end-portion.

In conformity with my invention I provide a leaf-spring 19. In the drawings this is bent or bow-shaped so that it resembles the letter U. One forwardly extending

branch thereof is made fast at its extremity by the screw or bolt 20 to a horizontal shelf 21 forming a portion of the supporting-stand 10. The bend or bight of the spring projects rearwardly, and the other branch is extended forward, its free extremity taking bearing upon one of the rocker-arms 8, against which it exerts a downward pressure. While the front-plate occupies its closed position this pressure holds the lower edge of the front-plate against the upper surface of the shuttle-race, and operates to prevent vertical shifting movement as the lay swings to and fro. When the change-shaft acts, through the devices which have been described, to turn the rocker to raise the front-plate, the swinging movement of the rocker-arm operates to raise with it the upper branch of the spring 19, and as the upward swinging movement of the rocker-arm progresses the free extremity of the spring slips upon the rocker-arm a little farther from the axis on which the rocker swings. Consequently, in the elevated position of the rocker and front-plate the spring acts with greater leverage upon the rocker-arm, thus giving it the greatest effect in beginning the subsequent closing movement of the rocker and front-plate, so as to start the said movement promptly, the leverage decreasing somewhat as the rocker and front-plate approach their closed position, in consequence of the extremity of the spring slipping on the rocker-arm toward the pivotal axis.

By making the spring 19 in bent or U-shape I am enabled to conveniently employ a leaf-spring of sufficient length to obviate liability of the spring becoming set by the extent of the opening movement of the rocker and front-plate, and thereby being rendered unfit for service. The spring may vary from the precise shape shown.

I claim as my invention:—

In a loom, in combination, the lay, a rocker thereon provided with a front-plate, and a bent U-shaped leaf-spring fixed by one extremity in relation with the lay, and engaging by its free extremity with the rocker to close the same and the front-plate and hold them from movement as the lay swings to and fro.

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

SIMEON SCHOON JACKSON.

Witnesses:

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