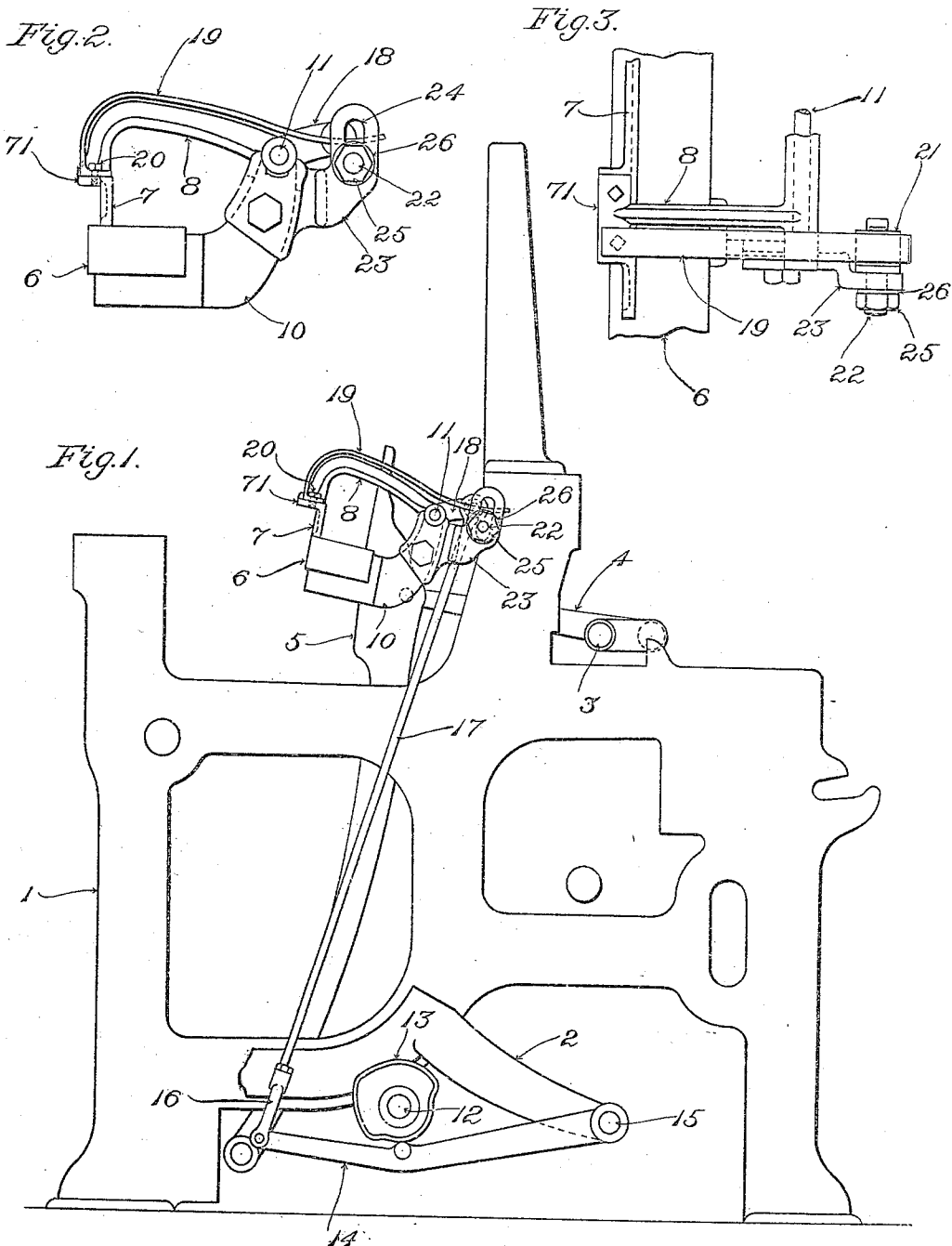


E. W. BARRETT.
WEFT REPLENISHING LOOM.
APPLICATION FILED FEB. 6, 1908.

952,498.

Patented Mar. 22, 1910.



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UNITED STATES PATENT OFFICE.

EDWIN W. BARRETT, OF READVILLE, MASSACHUSETTS, ASSIGNOR TO THE STAFFORD COMPANY, OF READVILLE, MASSACHUSETTS, A CORPORATION OF NEW JERSEY.

WEFT-REPLENISHING LOOM.

952,498.

Specification of Letters Patent.

Patented Mar. 22, 1910.

Application filed February 6, 1908. Serial No. 414,465.

To all whom it may concern:

Be it known that I, EDWIN W. BARRETT, a citizen of the United States, 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 purpose 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 shows in plan the parts of 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 so that it conforms substantially in shape with one of the arms of the rocker, although this is not essential. The said spring is connected with the rocker
 5 and front-plate and occupies a position parallel with one of the rocker-arms, and it is herein shown close alongside the outer one of the latter, this being the preferable arrangement. The spring is herein shown
 10 attached directly to the front-plate, although this is solely a matter of convenience, the attachment being shown effected by means of a screw or bolt 20 which passes through a hole in an ear formed by bending the
 15 forward extremity of the spring backward, the threaded portion of the stem of the screw or bolt entering a threaded hole which is tapped in a forwardly extending lug or flange 71 on the front-plate. The rear ex-
 20 tremity of the spring 19 engages with a relatively stationary bearing 21 located adjacent the pivotal axis around which the rocker swings, but somewhat removed therefrom so that the said bearing is eccentric-
 25 ally disposed or out of center as it sometimes is termed with reference to the said axis. In consequence of its engagement with the stationary bearing the spring is maintained in a state of tension and acts
 30 with a tendency to turn the rocker so as to press the lower edge of the front-plate against the shuttle-race, as in Figs. 1 and 2, and to return the rocker and front-plate to the positions occupied by them in the
 35 said figures after the rocker has been rocked to raise the front-plate to open the shuttle-box. The bearing is so located with reference to the axis of the rocker that the resultant force operates in an upward direc-
 40 tion along a line rearward of the rocker axis through the arm 18 of the latter, although the precise direction of the resultant line of force is not material. The effect is the same as though upward pres-
 45 sure were transmitted directly to the rocker itself or its rearwardly projecting arm 18 at a point rearward of the said axis. The spring 19 is a rearwardly-projecting yield-
 50 ing arm of the rocker. The stationary bearing is in this instance a roll which is

mounted upon a stud 22 carried by a small stand 23 fastened to the supporting stand 10. The roll is employed preferably, although not necessarily in all cases, be-
 55 cause it permits the spring to adjust itself against the stationary bearing with a minimum of friction as the rocker rises and falls.

To enable the effective tension of the spring to be regulated to meet the require-
 60 ments, the stationary bearing is mounted adjustably. In this instance the adjustment is provided for by slotting the stand 23 vertically at 24 for the reception of the stud 22 on which the roll 21 is mounted, 65 the stud being partly screw-threaded and having applied thereto a securing nut 25 and washer 26 in manner usual in the like connections.

The gist of the invention consists in a 70 rocker carrying the front-plate and provided with a projecting spring, combined with an external bearing with which the projecting portion of the spring engages.

I claim as my invention:— 75

1. In a loom, the lay, and a rocker thereon provided with a front-plate and also provided with a projecting spring, combined with an external bearing with which
 80 the spring engages.

2. In a loom, the lay, and a rocker thereon provided with a front-plate and also provided with a rearwardly projecting spring, combined with a stationary bearing
 85 at the rear of the rocker axis with which the projecting portion of the spring engages.

3. In a loom, the lay, and a rocker thereon provided with a front-plate and also provided with a rearwardly projecting 90 spring, combined with a stationary bearing with which the spring engages, adjustable to vary the tension of the spring.

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

EDWIN W. BARRETT.

Witnesses:

EDITH J. ANDERSON,
 CHAS. F. RANDALL.