No. 855,356. PATENTED MAY 28, 1907.

E. S. STIMPSON.

SHUTTLE CHANGING LOOM WITH SWINGING FRONT PLATE FOR THE SHUTTLE BOX.

APPLICATION FILED MAR. 8, 1906.

FIG. 1.

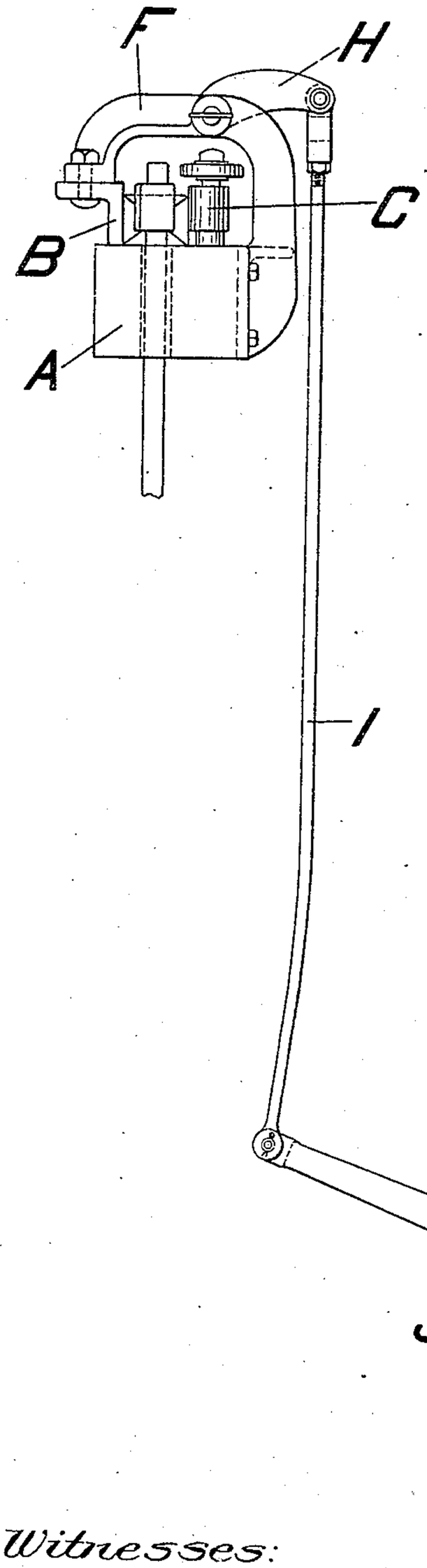
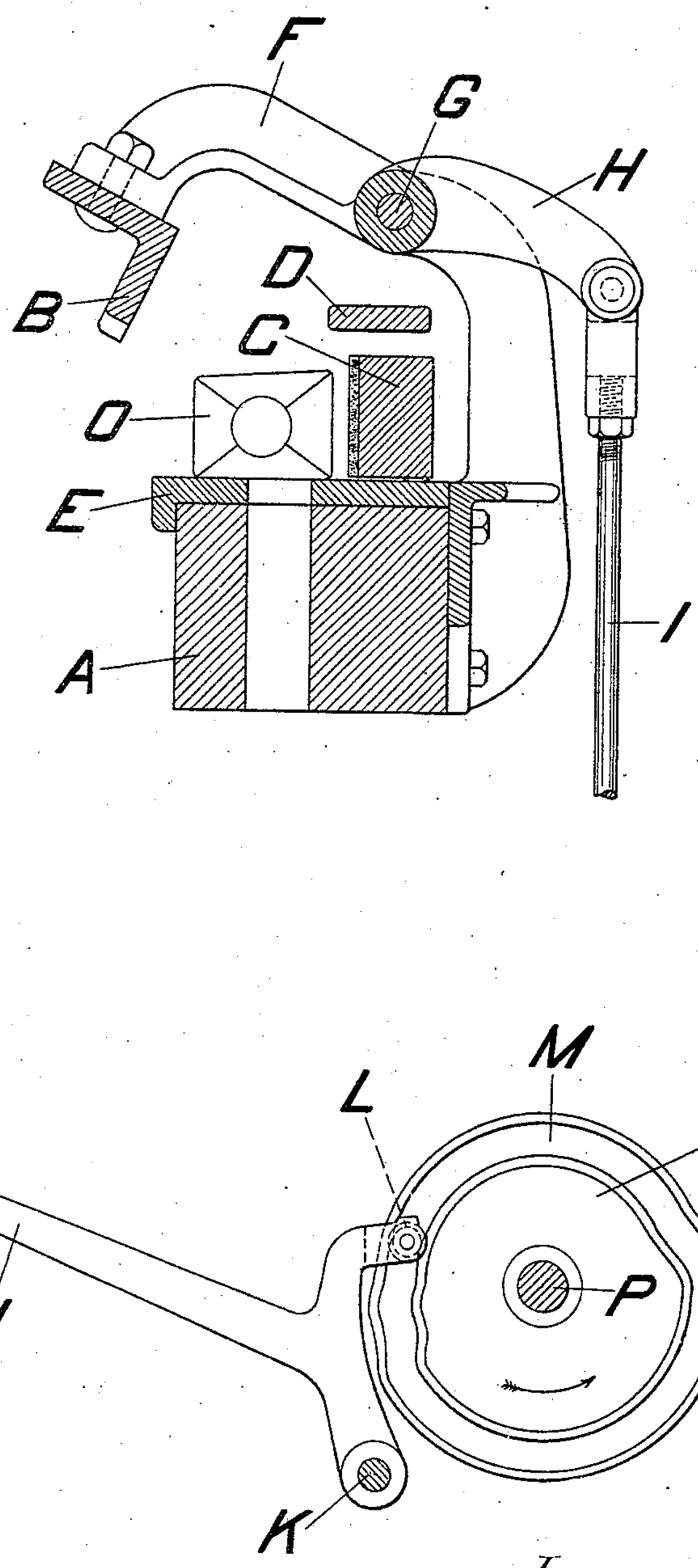


FIG. 2.



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UNITED STATES PATENT OFFICE.

EDWARD S. STIMPSON, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

SHUTTLE-CHANGING LOOM WITH SWINGING FRONT-PLATE FOR THE SHUTTLE-BOX.

No. 855,356. Specification of Letters Patent. Patented May 28, 1907.

Application filed March 8, 1906. Serial No. 304,853.

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, of Hopedale, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Automatic Shuttle-Changing Looms with Swinging Front-Plates for the Shuttle-Boxes, of which the following is a specification.

In automatic weft replenishing looms wherein the weft replenishment is accomplished by discharging the spent shuttle and inserting a fresh shuttle, it is a customary plan to move the front-plate of the shuttle-box at the supply side of the loom upwardly so as to permit the insertion of the fresh shuttle by a substantially horizontal movement into the then open shuttle-box; and, after the fresh shuttle has thus been put into place, the front-plate descends into normal position, thus closing the shuttle-box, and the fresh shuttle is then in position to proceed with the weaving operations. In such looms, the fresh shuttle may not be inserted accurately into place on the race-plate of the lay and this defective position of the shuttle is enhanced in case the usual rear binder is being pressed forwardly by its usual spring at the time the fresh shuttle is inserted. The object of the present invention is to enable the front-plate of the shuttle-box to properly descend into place in case the fresh shuttle is not accurately located on the race-plate of the lay and at the same time to force the shuttle into its proper position ready to be picked through the shed.

In carrying out the object of this invention a swinging front-plate for the shuttle-box at the supply side of the loom is provided, this swinging front-plate swinging fore and aft as well as up and down during its movements in opening and closing the shuttle-box. Such swinging front-plates have heretofore been used, but they have been arranged so that they provide only for a comparatively small displacement of the inserted shuttle and hence have been provided with springs for closing them in order that no damage should be done in case of a badly misplaced shuttle. In accordance with the present invention, the front-plate is swung positively in both directions and it has such an extended fore and aft swing as to provide for all contingencies in the misplacement of the inserted shuttle.

The present improvements are illustrated in the accompanying drawings, in which—

Figure 1, is an end view of a lay at the supply side of the loom, so much of the other parts of the loom being shown as will enable the invention to be clearly understood. Fig. 2, is a vertical cross-section of the shuttle-box at the supply side of the loom.

A, is the lay; B, is the front-plate of the shuttle-box; C, is the rear of the shuttle-box constituted in this instance by a usual binder; D, is the top-plate of the shuttle-box; and E, is the race-plate. The front-plate is secured to arms F, F, which swing on a horizontal axis G. A rearwardly extending arm moving with the front arms F, F, has pivoted to it at the rear a link I. This link I, at its lower end is pivotally connected to a lever J, pivoted at K. This lever has a roll L, which occupies a closed cam groove M, in the face of a cam wall O, secured to a shaft P. This shaft is a change-shaft of well known character. This change-shaft is set into rotation whenever a change of shuttles is to be effected. It is obvious that with the closed cam groove M, the front-plate B, will be positively swung in both directions. To enable the front-plate to have an adequate fore and aft movement in raising and lowering, the axis G, on which the front-plate swings is carried well up and forward. As illustrated, this axis is parallel with the length of the lay and is above the rear plate of the shuttle-box. Fig. 2, shows the front-plate open in position for a shuttle Q, to be inserted. As here shown, the front-plate is well forward of the shuttle and the lower edge of the front-plate is forward of the front edge of the race-plate. Hence, if the shuttle remains on the race-plate at all, the front-plate in descending will encounter the shuttle and shove it back against the binder.

I claim—

1. An automatic shuttle-changing loom having, in combination, a front-plate for the shuttle-box at the supply side of the loom which swings both up and down and fore and aft, and positive means for swinging the front-plate in both directions.

2. An automatic shuttle-changing loom having, in combination, a front-plate for the shuttle-box at the supply side of the loom which swings up and down and fore and aft on a horizontal axis substantially parallel

with the length of the lay, said axis being over the rear plate of the shuttle-box and sufficiently forward to enable the lower rear edge of the front-plate when elevated to be forward of the front edge of the race-plate of the lay, and means for positively moving said front-plate in both directions.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD S. STIMPSON.

Witnesses:

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