C. I. KANE.

Shuttle-Motion for Looms.

No. 167,176. Patented Aug. 31, 1875.

Fig. 3.

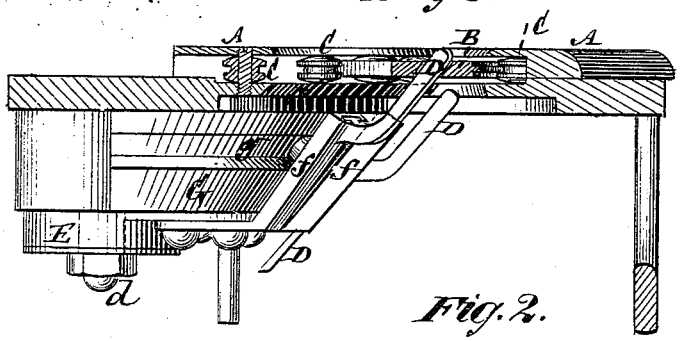


Fig. 2.

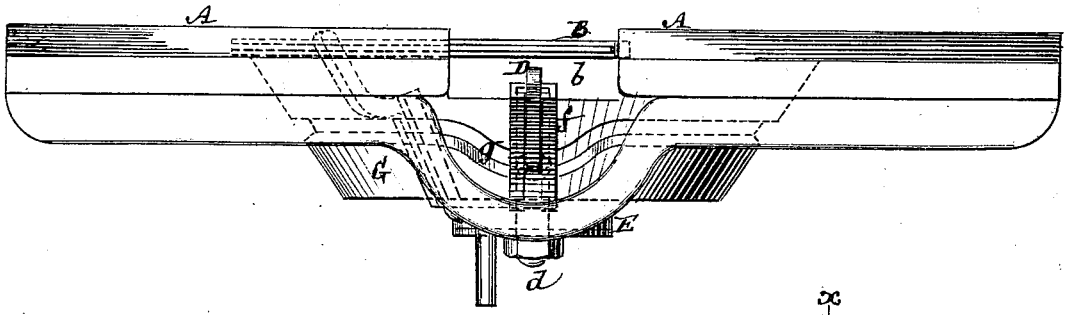
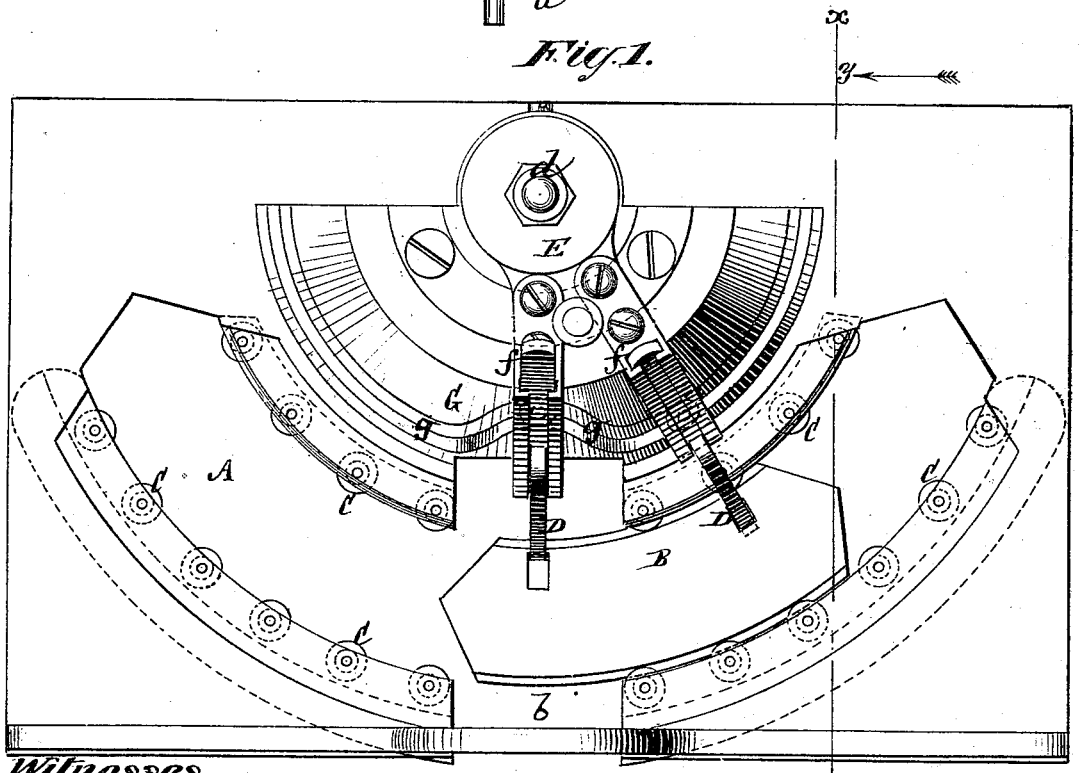


Fig. 1.



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CHARLES I. KANE, OF MILFORD, CONNECTICUT.

IMPROVEMENT IN SHUTTLE-MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. **167,176**, dated August 31, 1875; application filed January 12, 1875.

To all whom it may concern:

Be it known that I, CHARLES I. KANE, of Milford, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Shuttle-Motions for Looms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

This invention more particularly relates to looms for weaving narrow goods, and in which a raceway for the shuttle, open both above and below, is used.

The invention consists in an open raceway, composed of or provided on its opposite edges with grooved or flanged guide-rollers, for both directing the shuttle in its course and for supporting the same, and whereby the use of oil or lubricating material to facilitate the run of the shuttle, and which is apt to soil the goods, is dispensed with.

As described in Letters Patent 137,077, issued to me March 25, 1873, either a single web or several webs may be woven in the same loom, but the necessary parts will here be shown as adapted to weaving a single web, said parts being duplicated or multiplied when weaving more than one web.

Figure 1 represents an inverted plan of the shuttle-motion of a portion of a loom constructed in accordance with my invention. Fig. 2 is a front view of the same, and Fig. 3 a transverse vertical section thereof, on the line *x x*, looking in direction of the arrow *y*.

A is the raceway, in which the shuttle B, that should be provided with the usual bobbin, works. Said raceway is open both above and below, and is composed or provided, on its front and back or opposite edges, of or with grooved or flanged guide-rollers C, which, by their construction, not only serve to direct the shuttle in the line of the raceway, but also to support the shuttle, the latter, on its edges, being made to fit the grooves or flanges of the guide-rollers.

By this construction of the raceway and shuttle to suit, oil or lubricating material to facilitate the run of the shuttle, and which is apt to soil the goods, is dispensed with.

The raceway A, shown in the drawing, is of an arc shape or in form of a circle, the plane of which is parallel, or nearly so, with that in which the web is woven, and perpendicular to the harness-motion. Said raceway is stationary, for use in combination with a lay or beater, having a reciprocating motion, and has its outer edge constructed with an opening, *b*, wide enough for the free passage of the warp.

When the raceway is of a curved form, as shown, the shuttle B is of corresponding curvature on its edges, and the same may be constructed, as in my patent hereinbefore referred to, of a thin flat frame. It is very desirable in fact to have the shuttle as thin as possible, especially at its front edge, to reduce the necessary width of opening the shed. To this end, and to do away with the crossing of the shuttle drivers or fingers D, and to operate the latter from the front side of their center of oscillating motion *d*, which is concentric with the raceway, said fingers are made to come up from below to gear alternately with opposite ends of the shuttle, thus dispensing with projections on the bottom of the shuttle for reception of the fingers, and are operated as follows: The oscillating shuttle-driver or finger-carrier E is constructed with slotted arms or guides *f*, which are set inclining to travel over or against a conical stationary grooved cam, G, in front of the center of motion *d*, and with the groove *g* of which the fingers D gear, by means of rollers on their faces, to give to said fingers their necessary up and down motions for alternate driving connection with and clearance of the shuttle, as required, as the carrier E is oscillated from *d* as a center of motion.

I claim—

The raceway, composed of or provided, both on its front and back edges, with flanged or grooved guide-rollers, in combination with a shuttle, having its bearing-edges constructed to correspond, whereby said shuttle is not only directed but supported by the rollers, substantially as specified.

CHARLES I. KANE.

Witnesses:
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