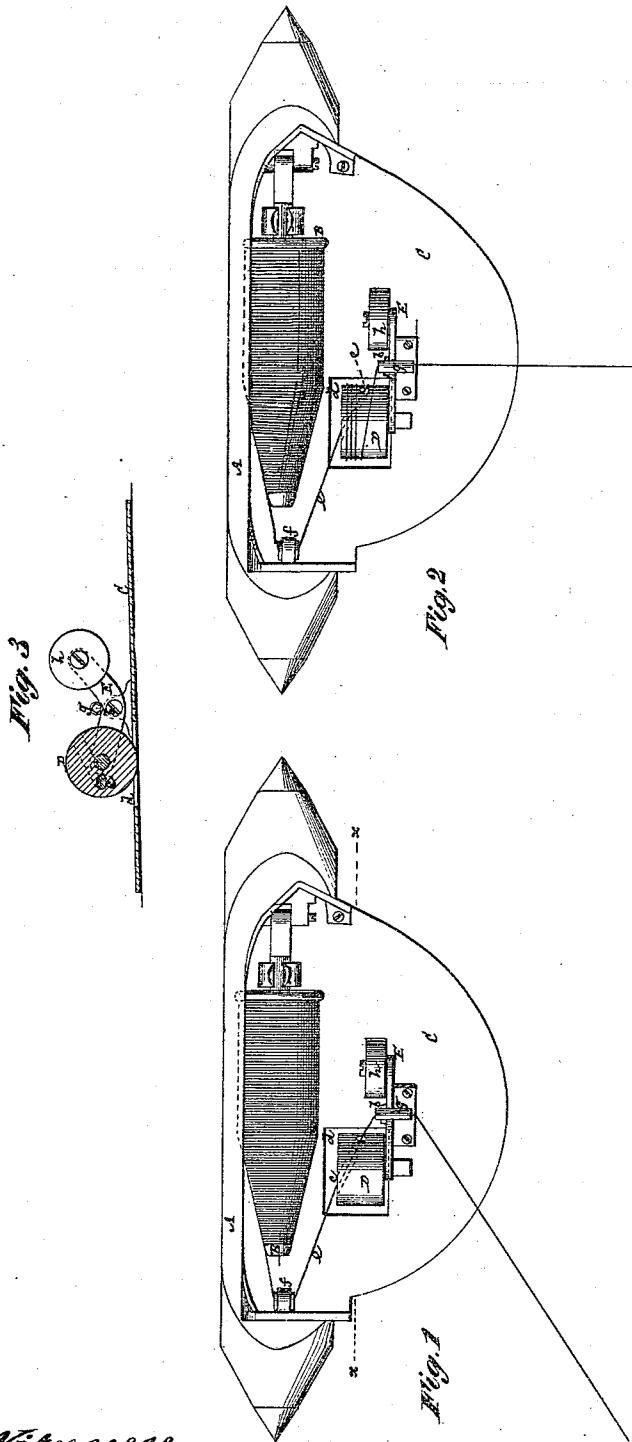


ROBERT WHITEHILL.
Improvement in Loom-Shuttles.

No. 126,119.

Patented April 23, 1872.



Witnesses.
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UNITED STATES PATENT OFFICE.

ROBERT WHITEHILL, OF NEW YORK, N. Y.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 126,119, dated April 23, 1872; antedated April 18, 1872.

To all whom it may concern:

Be it known that I, ROBERT WHITEHILL, of the city, county, and State of New York, have invented a new and useful Improvement in Take-up Devices for Shuttles; 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, and in which—

Figures 1 and 2 represent plan views of a shuttle in different positions of its throw to illustrate the action of my improved take-up as applied thereto. Fig. 3 is a horizontal vertical section at the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts throughout the several figures of the drawing.

My invention relates to the shuttles of looms used for weaving corsets and other articles or work, in which the number of warp-yarns raised and lowered to open and close the shed is varied, during the progress of the work, so as to change the width of the shed. The invention consists in a take-up roller constructed or provided with an eye or guide for the weft-yarn as it comes from the quill to pass through, and so that said take-up, which is an attachment to the shuttle, prevents no obstruction to the draft on said yarn, but is operated by frictional contact with the warp to take up and let out again, in a uniform manner, the surplus weft-yarn drawn from the quill by the throw of the shuttle over or beyond the width of the shed.

Referring to the accompanying drawing, A represents the body of the shuttle; B, its quill; and C, a brace-plate attached to or forming part of the shuttle, and arranged to travel over and in close proximity to the warp-yarns. The take-up is arranged upon this plate; and consists mainly of a horizontal roller, D, having its axis transversely disposed to the path of the shuttle, and carried on its outer side by an arm or lever, E, the fulcrum of which is at *b*, while the inner side or face of said roller is unsupported, and has an eye, *c*, in it arranged to run obliquely through the roller to and through its periphery. This roller, when down, travels on the warp, and is operated by frictional contact therewith, said roller projecting through a slot, *d*, in the plate C, for the purpose. The weft-yarn *e* passes from the quill B, through an end guide, *f*, and

from thence through the eye *c* in the roller, from whence it passes through a tube or guide, *g*, on the lever E, which latter has a roller or bearing, *h*, on the side of the fulcrum *b*, opposite that on which is arranged the roller D, for the purpose of holding up the latter as it passes through the shed and preventing its rotation, by contact of the roller or bearing *h*, with the under surface of the warp-yarns that compose the shed.

A take-up thus constructed allows of the free draft of the weft-yarn from off the quill through the eye in the roller D, without any rotation of the latter taking place, while the shuttle passes through the shed, but in its travel beyond the shed in either direction the roller D is rotated by frictional contact with the warp to wind up the weft-yarn *e* drawn from the quill during such prolonged travel of the shuttle, and in the return of the latter toward the shed to pay out such surplus weft by the unwinding of the same from said roller. In this way there is no unequal strain or tension on the weft-yarn, but the slack is taken up and given out again in a uniform and easy manner by the mere friction of the roller D in passing over the warp, and there is no interference with the draft from the quill, which by the take-up here described is kept free from entanglement by the weft-yarn. Fig. 1 of the drawing represents the shuttle as at the end of its throw immediately previous to commencing its return travel, and Fig. 2 shows the shuttle as passing through the shed, with the weft-yarn *e* wound upon the roller D, preparatory to paying out the same in the completion of its throw.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination, with the shuttle, of a take-up roller provided with an eye or guide for passage of the weft-yarn, and arranged so as to be operated by frictional contact with the warp to wind and unwind said yarn during the throw of the shuttle, substantially as specified.

2. The combination with such roller D, applied to a shuttle, of the lever E and the roller or bearing *h*, arranged to operate substantially as described.

ROBERT WHITEHILL.

Witnesses:

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