

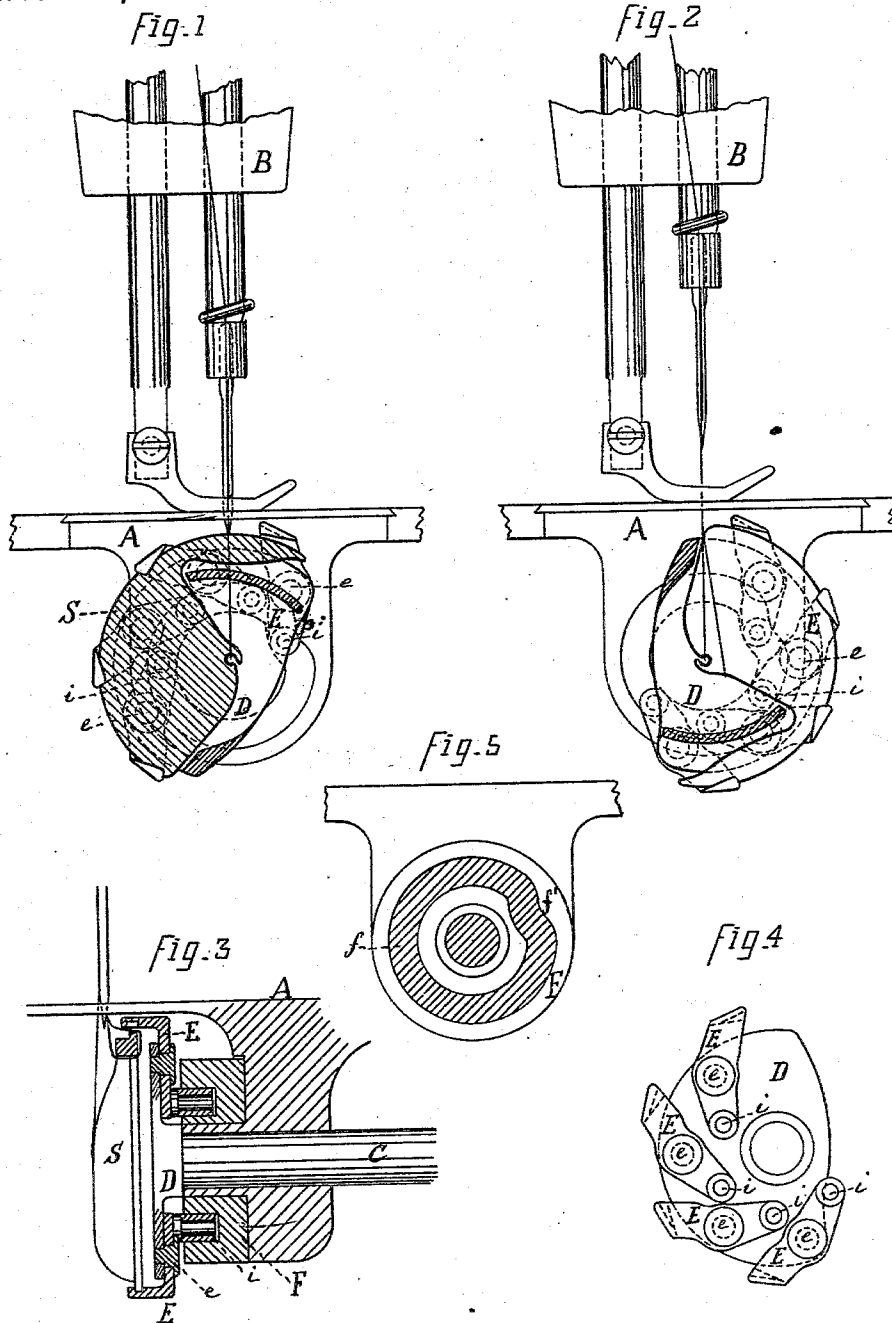
(No Model.)

L. B. MILLER & P. DIEHL.

SHUTTLE HOLDER FOR SEWING MACHINES.

No. 283,636.

Patented Aug. 21, 1883.



WITNESSES.

*Wm Scott*  
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# UNITED STATES PATENT OFFICE.

BEFORE

LEBBEUS BALDWIN MILLER AND PHILIP DIEHL, OF ELIZABETH, N. J.

## SHUTTLE-HOLDER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 283,636, dated August 21, 1883.

Application filed November 26, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, LEBBEUS BALDWIN MILLER and PHILIP DIEHL, both of Elizabeth, in the county of Union and State of New Jersey, have made an invention of certain new and useful Improvements in Shuttle-Holders for Sewing-Machines; and we do hereby declare that the following is a full, clear, and accurate description and specification of the same.

The principal object of this invention is to provide a holder for a sewing-machine shuttle, which will avoid the friction heretofore encountered in running such a shuttle at high speed, either in a fixed race or upon a relatively-fixed plate or support; and we attain this result by the use of a series of arms or levers which clasp and support the shuttle, and are automatically and successively raised to permit the passage of the loop formed by the upper or needle thread.

This invention can readily be applied to any of the common forms of shuttle-machine in use.

In order to show more clearly the operation and effect of our invention in the best form in which we have embodied it at the present date, we have represented and will proceed to describe it in connection with a shuttle having a body, beak, and beak-shank, and adapted to operate with an oscillating movement in a machine similar in form and general operation to that shown and fully described in Letters Patent of the United States No. 208,838, granted to us of October 8, 1878.

In the drawings we have shown only so much of such a machine as is necessary to illustrate the operation of our device.

Figure 1 gives a front view of a portion of such sewing-machine, showing the shuttle near the first part of its forward movement and the shuttle-holder when the first of the series of arms is raised to let the loop of the needle-thread pass, while the other arms sustain the shuttle. Fig. 2 is a similar view near the end of the forward movement of the shuttle and where the last of the series of arms is so raised. Fig. 3 is a sectional view of the whole shuttle-holding device with part of the shuttle-oscillating shaft. Fig. 4 is a view of the shuttle-holder only, and Fig. 5 is a face view of the

cam which governs the successive movements of the shuttle-holding arms or levers.

A, Figs. 1, 2, and 3, is the front of the bed-plate of the sewing-machine; B, its vertically-reciprocating needle-bar; and C, Fig. 3, the oscillating shaft, through which motion is communicated to the shuttle holding and actuating devices.

In this machine the series of arms or levers E E E E are respectively secured by the fulcrum-pivots *e e e e* to a disk or plate, D, their outer ends being bent or curved, (and preferably notched,) as shown in Fig. 3, to enable them to grasp and hold the outer flange or rim of the shuttle S, and their inner ends being provided with rollers or projections *i i i i*, which are received in the groove *f* of the cam F, said cam being stationary and secured to the bed-plate A. As the shaft C oscillates, carrying with it the disk D, the rollers *i i i i* are compelled to travel in the cam-groove *f* of the stationary cam F, and when each roller *i* successively reaches the point *f'* in said groove its respective arm or lever E is compelled to turn on the fulcrum-pivot *e*, raising the end which clasps the rim of the shuttle. Of course the cam F should be so placed and the oscillation of the shaft so "timed" to correspond with the movements of the needle-arm as to raise each arm when the loop of the needle-thread reaches it in its passage around the shuttle.

A number of variations can readily be made in the form of the shuttle-holding arms, of the piece which serves to support the fulcrum and connect the series of arms, and of the mechanism by which they are successively raised to permit the passage of the thread—as, for instance, such arms may be bent at right angles over the edge of the fulcrum-support, and there secured by pivots running at right angles to the line of the oscillating shaft, and one end of each such arm may directly enter a cam-groove, thus dispensing with any roller or projection; or such arms may be jointed, or they may be formed as springs, proper changes being also made in the fulcrum-support and in the governing-cam or its equivalent; but an essential point of our invention is the employment of a series of successively-moving arms to clasp the shuttle, so that when driven at high speed it may be as securely held and

supported as in a permanent raceway, or on a fixed support, without encountering the disadvantages met where the shuttle runs upon or against a relatively-stationary surface.

5 We claim as our invention—

1. A sewing-machine shuttle-holder composed of a series of pivoted arms attached to a disk or fulcrum-piece and adapted to move independently and rise successively over the  
10 loop of the needle-thread, substantially as and for the purposes set forth.

2. In a sewing-machine, a shuttle-carrying device comprising a movable plate or fulcrum-piece, supporting a series of pivoted arms

adapted to clasp the shuttle, and a stationary 15 cam adapted to govern the independent and successive movements of such arms, substantially as and for the purpose set forth.

3. The combination, with the shuttle-driving shaft C, and the plate D, provided with 20 the pivoted supporting-arms E E E E, of the governing-cam F, as and for the purposes set forth.

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Witnesses:

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