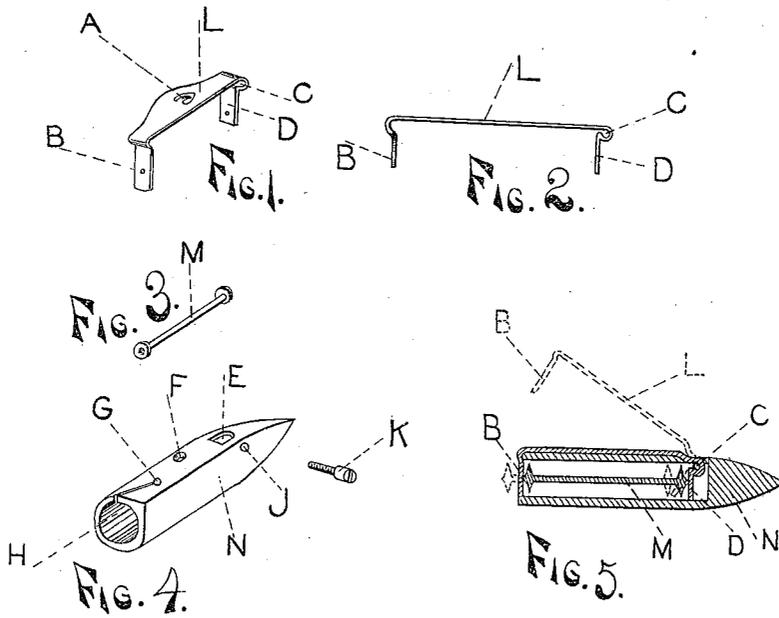


(No Model.)

D. L. & W. H. KEELER.  
SEWING MACHINE SHUTTLE.

No. 308,363.

Patented Nov. 25, 1884.



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# UNITED STATES PATENT OFFICE.

DAVID L. KEELER AND WILLIAM HENRY KEELER, OF GRAND RAPIDS, MICH.

## SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 308,363, dated November 25, 1884.

Application filed December 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, DAVID L. KEELER and WILLIAM H. KEELER, both citizens of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have jointly invented certain new and useful Improvements in Sewing-Machine Shuttles, of which the following is a specification.

Our invention relates to cylinder-shuttles for sewing-machines; and the objects of our invention are, first, to support the bobbin within the shuttle by means of a spring bobbin-holder, so that the bobbin does not come in contact at any point with the shuttle; second, to construct the bobbin-holder of such shape and so attach it to the shuttle that when the rear end of the bobbin-holder is freed from the bobbin and raised the bobbin-holder will push the bobbin out of the shuttle; and, third, to furnish a quick and easy method of removing the bobbin from the shuttle. We attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the spring bobbin-holder detached from the shuttle. Fig. 2 is a side elevation of the bobbin-holder, showing its form at its front and rear end. Fig. 3 is a perspective view of the bobbin detached. Fig. 4 is a perspective view of the cylinder-shuttle with the bobbin-holder and bobbin removed; and Fig. 5 is a vertical sectional view of the cylinder-shuttle with the bobbin and bobbin-holder in position for use, also in position when thrown out.

Similar letters refer to similar parts throughout the several views.

The cylinder-shuttle does not differ in its general form and outline from ordinary cylinder-shuttles, but is adapted to our improvements, as hereinafter described.

The bobbin-holder may be made of any suitable metal, but must have sufficient elasticity to hold the bobbin.

L shows the bobbin-holder, and B the rear end of the holder. This end may be merely a narrow piece similar to the front end, (shown by D.) On the inner sides of the end pieces, B and D, are indentations to receive the journals or point ends of the bobbin and form the bearings for the bobbin. The bob-

bin M may be of metal, and has slight projections at either end, which serve as journals, the projection at the front end fitting into the indentation of D, and the one at the rear end fitting into the indentation of B. The bobbin is a little longer than the space between B and D, so that said B and D are sprung apart in order to insert the bobbin, and when the bobbin is so inserted it is clasped and held by the bobbin-holder.

In Fig. 4, H shows the chamber in shuttle-cylinder N, in which the bobbin is supported.

G is a slot in the shuttle which extends to a point at or near the center of chamber H. The thread passes through the front end of this slot when the shuttle is threaded.

F is an indentation or opening in the shuttle for the reception of the tongue A of the bobbin-holder.

E is an opening into the shuttle at or near the front end of the chamber H for the insertion of the front end of the bobbin-holder. The front end of the bobbin-holder is provided with a hinge or loop, C, as shown in Figs. 1 and 2.

J is an opening in the shuttle for the reception of the screw or rivet K. The part of the shuttle over which the back end of the bobbin-holder passes is preferably cut away a little, so that the bobbin-holder will not project beyond the rear end of the shuttle. This construction is shown in Fig. 5. The front end of the bobbin-holder is inserted in the opening E of the shuttle N, and the screw K, inserted in the hole J, passes through the hinge or loop C of the holder, thereby attaching the bobbin-holder to the shuttle. The bobbin is now inserted in the chamber H, the end of the thread being drawn into the slot G, and the rear end of the bobbin-holder pressed down over the rear end of the shuttle. The upper rear edge of the shuttle, fitting into the curved part of the rear end of the holder, keeps it in position on the shuttle, and the lip B is pressed down over the rear end of the bobbin when the journal on that end of the bobbin enters the indentation in B, and the journal on the front end of the bobbin enters the indentation on the front end of the bobbin-holder when the bobbin is journaled in the holder, and does not come in contact with the shuttle at any point. The construction and form of the chamber

H and bobbin-holder are such that by inserting the bobbin into the chamber and pressing down the bobbin-holder the bobbin is pressed to its position in the holder, as shown in Fig. 5.

5 The bobbin is the same shape and size at each end, so that either end may be inserted into the chamber H. When the bobbin is inserted and the thread drawn through the slot G, and the bobbin-holder pressed into position, as

10 above described, the tongue A projects downward slightly into the opening F, the thread is drawn forward, passing under the tongue A, and is then drawn backward, passing over tongue A, and the shuttle is threaded, ready

15 for use. The bobbin is removed from the shuttle in the following manner: Raise the rear end of the bobbin-holder and it acts as a bent lever, turning on rivet or screw K as a fulcrum. The front end of the holder, pressing against the

20 bobbin, crowds it out of the chamber, as shown by the dotted lines in Fig. 5.

Having thus described our invention, what we claim to have invented, and desire to secure by Letters Patent, is—

25 1. In combination with a shuttle provided with an aperture near its forward end and a bobbin, a spring bobbin-holder composed of a horizontal plate which is outside of the shut-

tle when the holder is in place, and of two end pieces, which are adapted to furnish bearings for the bobbin, one of said end pieces passing through the aperture near the forward end of the shuttle when the holder is in place, and the other end piece passing over the open rear end of the shuttle, substantially as and

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2. The shuttle N, provided with an aperture, E, near its forward end, a slot, G, extending inward from its rear edge, and an aperture or recess, F, in combination with the bobbin M and the spring bobbin-holder L, said holder being provided with a rear end piece, B, a forward end piece, D, adapted to pass through the aperture E, and a tongue, A, located, when the holder is in place, over the aperture or recess F, substantially as set forth.

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3. The shuttle-cylinder N, provided with the opening E and hole J, in combination with the bobbin-holder L, provided with the hinge or loop C, the bobbin M, and screw or rivet K, all substantially as described.

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