(No Model.)

W. F. DIAL.

SHUTTLE FOR SEWING MACHINES.

No. 304,707. Patented Sept. 9, 1884.

Fig. 1.

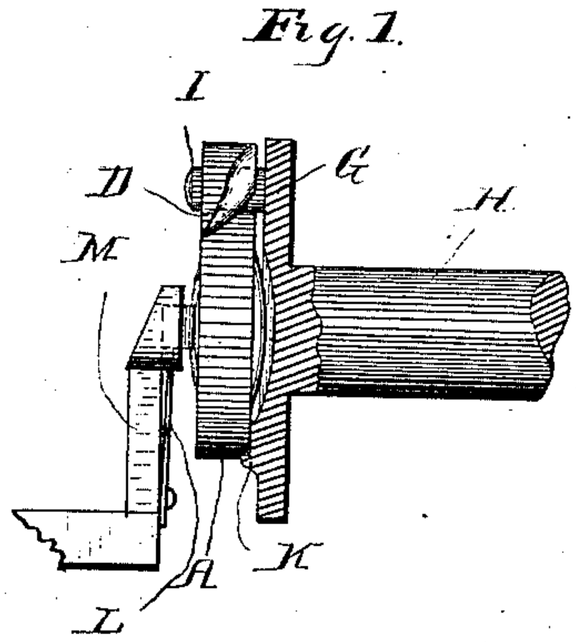


Fig. 2.

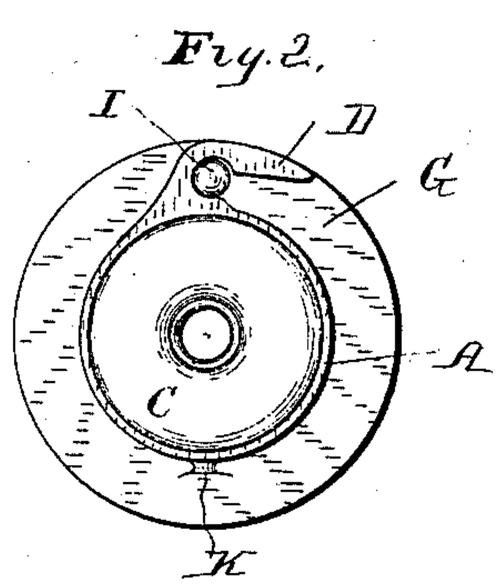


Fig. 3.

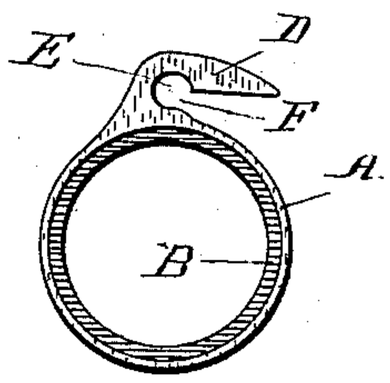


Fig. 4.

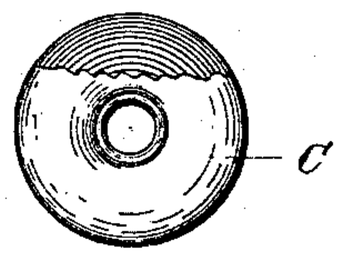
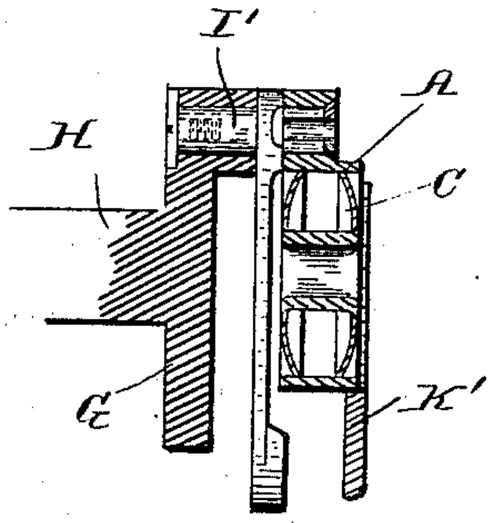


Fig. 5.



Witnesses
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atty

UNITED STATES PATENT OFFICE.

WILBUR F. DIAL, OF BRIDGEPORT, CONNECTICUT.

SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 304,707, dated September 9, 1884.

Application filed April 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILBUR F. DIAL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Shuttles for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a shuttle which shall be especially adapted for use in connection with the class of sewing-machines known as "rotary-shuttle" machines, and which I have found to work in a very satisfactory manner in connection with the machines which are described and claimed in my pending application for Letters Patent Serial Nos. 118,401 and 118,402, filed January 23, 1884. With this end in view I have devised the novel and exceedingly simple construction which I will now proceed to describe, and then point out in the claim.

In my description I shall refer by letters to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an edge view of the shuttle as it appears when in position upon the carrying-plate of a rotary-shuttle machine, the carrying-plate being in section and the shaft in elevation, the shuttle being shown as carried by a pin or stud, which is fixed in the plate and held against the face of the disk by a spring upon a sliding arm, as in my application, Serial No. 118,401, filed January 23, 1884. Fig. 2 is a face view of the disk with the shuttle in place, the spring and arm being removed. Fig. 3 represents the shuttle in elevation; Fig. 4, the bobbin in elevation, one side being partially broken away. Fig. 5 is a vertical section of the carrying-plate, shuttle, and bobbin in a rotary-shuttle machine, in which the shuttle is carried by a pin or stud, which has rotary motion in the carrying-plate, the shuttle-stud and link being shown in elevation, as in my application, Serial No. 118,402, filed January 23, 1884.

Similar letters indicate like parts in all the figures.

A is the shuttle, which consists of a ring having an internal shoulder, B, against which the bobbin C rests.

D is a curved hook, which projects outward from one side of the shuttle, and is adapted to engage the loop in the needle-thread. This hook is provided with a recess, E, in which the carrying-stud rests, and which is contracted at its opening, as at F, for a purpose presently to be explained.

G is the shuttle-carrying disk or plate at the end of the shaft H.

I in Figs. 1 and 2 represents a fixed stud projecting from the face of disk G, which carries the shuttle, and K a lug upon which the base of the shuttle rests. In the form shown in Fig. 5 the shuttle is carried by a pin, I′, which rotates freely in the carrying-disk, the base of the shuttle resting in a yoke, K′, which is more fully illustrated in my pending application, Serial No. 118,402, referred to above. In the form shown in Figs. 1 and 2, and also in that shown in Fig. 5, the shuttle is held in operative position by a spring, L, upon a sliding arm, M, which is illustrated in Fig. 1.

In use the shuttle is placed over the carrying-pin, and is held there by moving the holding-spring into place. In the formation of each stitch the loop in the needle-thread is caught by hook D, and passes into recess E and between the shuttle and the stud, which may or may not be grooved to accommodate the thread. In all cases the opening into the recess in the hook is contracted, as shown at F, so that the shuttle, when once placed upon the stud, cannot escape therefrom until removed in the proper manner.

It is of course obvious that various changes may be made in the details of construction without departing from the spirit of my invention, the gist of which lies in doing away with the irregularly-shaped heavy shuttle now in use and substituting therefor a light ring or band of metal, having a hook on one side to catch the thread, and adapted to carry a bobbin the full size of the internal diameter of the ring. I thus produce a small light shuttle, which carries a much larger bobbin, relatively, than any shuttle heretofore produced. The ring or band may be made quite thin, as there is slight friction, and consequently no perceptible wear upon it.

I claim—

A shuttle for sewing-machines, consisting of a ring or band of metal, the interior of which is a perfect circle, and has a flange against which the bobbin rests, and whose periphery is also a perfect circle, except that at one side is a projecting hook, which engages the loop in the needle-thread, and is provided with a recess which is engaged by the carrying-stud.

In testimony whereof I affix my signature in presence of two witnesses.

WILBUR F. DIAL.

Witnesses:

ISAAC HOLDEN,

LOUIS H. BAKER.