D. A. DALY.

SEWING-MACHINE SHUTTLES.

No. 190,289. Patented May 1, 1877.

Fig. 1.

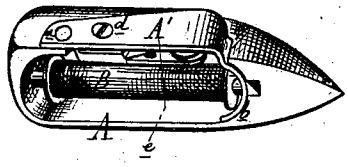


Fig. 4.

Fig. 2.

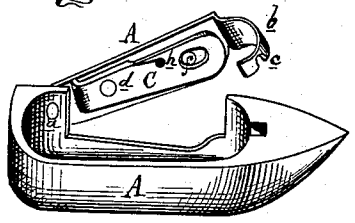


Fig. 5.

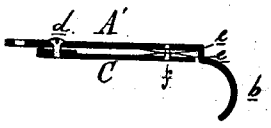


Fig. 6.

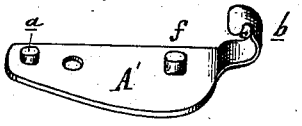


Fig. 3.

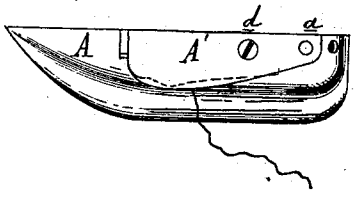
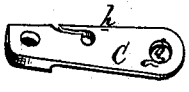


Fig. 7.



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UNITED STATES PATENT OFFICE.

DANIEL A. DALY, OF DETROIT, MICHIGAN.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **190,289**, dated May 1, 1877; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, DANIEL A. DALY, of Detroit, in the county of Wayne and State of Michigan, have invented an Improved Sewing-Machine Shuttle, of which the following is a specification:

The nature of my invention relates to an improvement in sewing-machine shuttles of that class which are provided with a swinging gate for the insertion of the bobbin into its bearings, and for retaining it in place, and more particularly to the tension devices, which may be adjusted without removing the shuttle from the race.

To this end it consists in combining with the gate a tension leaf-spring, adjustable by means of a screw in the gate, and two disks, between which the thread passes, and is compressed by said disks under the pressure of said leaf-spring, as more fully hereinafter set forth.

Figure 1 is a perspective view of my shuttle with the bobbin in place. Fig. 2 is a similar view with the gate opened and the bobbin removed. Fig. 3 is a top plan of the shuttle. Fig. 4 is a bottom plan of the gate and spring. Fig. 5 is a longitudinal section of the same at *x x*. Fig. 6 is a detached perspective view of the gate alone. Fig. 7 is a similar view of the spring.

In the drawing, A represents an ordinary shuttle-case, having a step in the heel and a recess in the point, to receive the journals of the bobbin B. The top side of the shuttle-case is cut out, and a gate, A′, is pivoted thereto at its heel end to close the cavity, the pivot being seen at *a*. The forward end of the gate is hooked, as at *b*, to close into the shuttle-recess, and is recessed at *c* to form the outer bearing for the bobbin-journal, and to secure it loosely in the shuttle.

C is a leaf-spring, having a flange turned at its heel to rest against the under side of the gate, to which it is secured by a screw, *d*, tapped through both. Near the front end of the gate there is a stud, *f*, on which are slipped two small steel disks, *e e*, whose inner faces are slightly conical, and are pressed together and against the gate by the leaf-spring, which has a hole, *g*, for the stud *f* to pass through. A thread-hole, *h*, is drilled in the spring, access to which is had by a curved or angular slot cut to it from the outer edge of said spring.

The gate being open, the bobbin may be dropped in place, and the shuttle be threaded by hooking the end of the thread through the slot into the hole *h*, thence carrying it over and between the disks *e e* to the outside and closing the gate. The bobbin is then loose in the shuttle, and the tension is had by the pressure of the disks upon the thread, which may be changed by turning the screw *d*, as occasion may require, without removing the shuttle from the race.

What I claim as my invention is—

The combination, with the shuttle-case A, of the gate A′, hinged to the top side of the said case, the leaf-spring C, secured to the inside of the said gate by the screw *d*, and the tension-disks *e*, whereby the tension is changed without removing the shuttle from the race, constructed and arranged substantially as described and shown.

DANIEL A. DALY.

Witnesses:

H. F. EBERTS,

WM. P. SPALDING.