F. ETZOLD.

Sewing Machine Shuttle.

No. 58,399. Patented Oct. 2, 1866.

Fig. 1

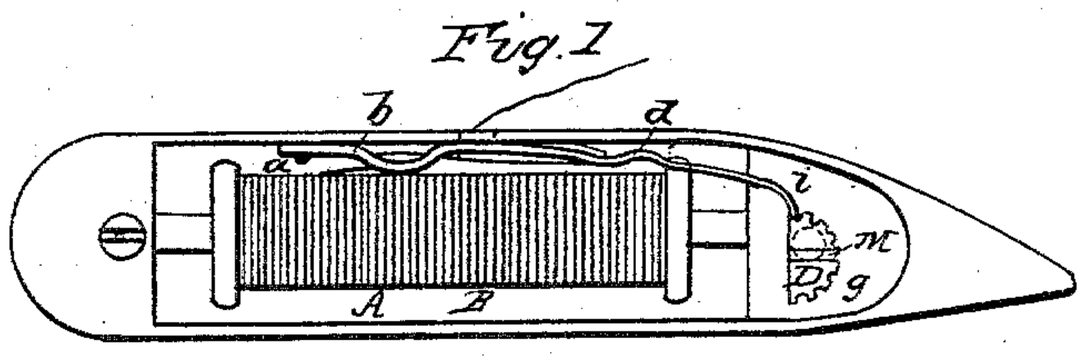
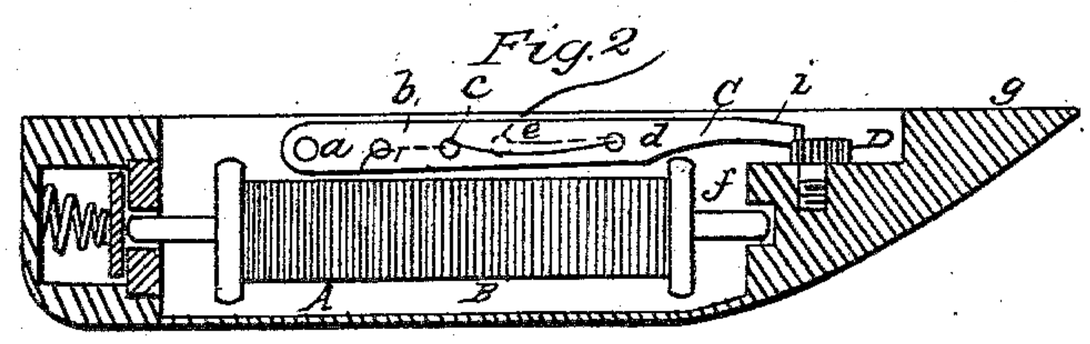


Fig. 2



Witnesses

J. W. Crumb

A. Lellerg

Inventor

F. Etzold

per Brown, Combs & Co

atty's

UNITED STATES PATENT OFFICE.

FREDERICK ETZOLD, OF UNION HILL, NEW JERSEY.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **58,399,** dated October 2, 1866.

To all whom it may concern:

Be it known that I, FREDERICK ETZOLD, of Union Hill, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Sewing-Machine 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 drawings, making a part of this specification, in which—

Figure 1 is a face view of a shuttle with my improvement on a scale larger than the real size. Fig. 2 is a horizontal section of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to that part of sewing-machine shuttles which produces the tension of the thread; and it consists in a novel combination of a notched eccentric cam with the tension-spring, bobbin, and shell of the shuttle, whereby the tension of the thread may be readily and conveniently adjusted when desired and retained securely at the same desired tension.

A is the shell of the shuttle, which is of the ordinary form, and in which the bobbin B is pivoted longitudinally in the usual or any suitable manner. C is the tension-spring, which is secured at one end to the upper part of the interior of the shell A by means of a screw or rivet, *a*. This tension-spring is furnished with transverse holes *b c d*, through which the thread is passed, and it is bent or bulged inward between the holes *b c*, and the thread is drawn from the bobbin first through the hole *b*, then back through the hole *c*, and then through the hole *d*, whence it passes between the tension-spring C and the inner surface of the top of the shell, and out through the eye *e* in the top of the shell, as shown in red lines in the drawings, the said spring producing friction upon the thread by pressing it against the inner surface of the top of the shell, the holes *b c d* in the spring C serving only to guide the thread to the eye *e*.

Firmly screwed into the thick or solid portion *g* of the shell A, in front of the cavity which contains the bobbin B, is a small screw, *f*, the head D of which is made eccentric or cam-shaped, and with notches in its periphery, as represented in the drawings.

The forward end, *i*, of the spring C is curved downward beyond the forward end of the bobbin B, and enters the notches of the cam or eccentric D, thus preventing it from turning around, at the same time that the pressure of the central part of the spring, between the holes *c* and *d*, against the thread is regulated by the position of the said eccentric D. By first pressing the spring C away from the eccentric D, and then turning the said eccentric with a screw-driver inserted in the groove *n* thereof, or by other suitable means, any desired point on the eccentric part of its periphery may be brought opposite the end *i* of the said spring, so that the central portion of the said spring will be pressed against the thread with a presssure proportioned to the distance of the extremity *i* of the spring from the axis of the eccentric D. By changing the position of the said eccentric with reference to the extremity of the spring, the pressure and friction of the latter upon the thread, and its consequent tension, may be regulated to any desired degree, and by the end of the spring resting in the notched periphery of the eccentric cam there is no liability of the cam being moved by the concussion of the shuttle in its reciprocating motion, which it would be liable to were its periphery smooth, and inasmuch as the position of the spring is not changed or affected when a new bobbin is put into the shuttle, no readjustment of the tension is required in such a case.

What I claim as new, and desire to secure by Letters Patent, is—

The toothed eccentric cam D, applied in combination with the spring C, and in relation with the bobbin B and shell A of the shuttle, substantially as herein set forth, for the purpose specified.

FREDERICK ETZOLD.

Witnesses:
N. GOETZ,
OTTO FUCHS.