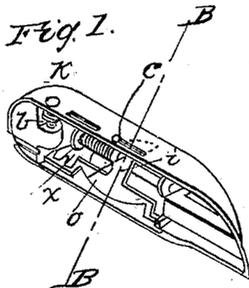
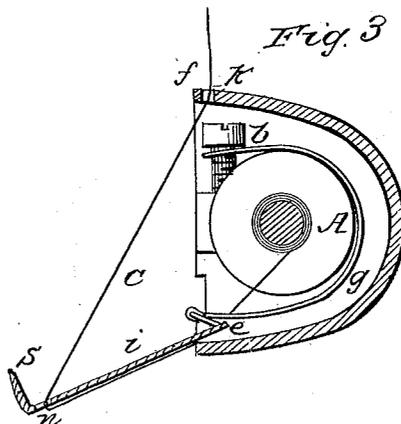
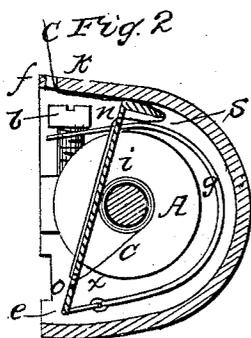
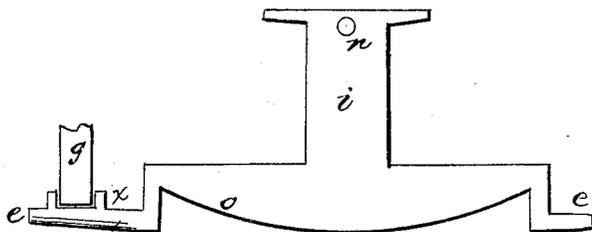


L. W. LANGDON.
Sewing Machine Shuttle.

No. 31,211.

Patented Jan. 22, 1861.

Fig. 4.



Witnesses
Thos. Beach
C. G. Curtis

Inventor;
L. W. Langdon

UNITED STATES PATENT OFFICE.

L. W. LANGDON, OF NORTHAMPTON, MASS., ASSIGNOR TO HIMSELF, AND
HIRAM WELLS AND D. G. LITTLEFIELD, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 31,211, dated January 22, 1861.

To all whom it may concern:

Be it known that I, L. W. LANGDON, of Northampton, in the county of Hampshire and State of Massachusetts, have invented certain Improvements in Shuttles for Sewing-Machines and Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a view of the shuttle; Figs. 2, 3, sections upon the line B B of Fig. 1, enlarged; Fig. 4, detail to be referred to hereinafter.

It is very desirable that the thread, as it passes from the shuttle, be subjected to a uniform and equable tension; and the attainment of this end is the object of my present invention, which consists in applying the pressure of a spring directly to the thread upon the bobbin in connection with a device whereby this pressure is relieved by the draft of the thread whenever it becomes excessive or beyond the limit assigned to it.

To enable others skilled in the art to understand my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings the thread is wound upon a bobbin, A, which is adapted to the shuttle in any ordinary or well-known manner. To the interior of the shuttle is pivoted, at the points *e*, a friction-plate, *i*, which is drawn down upon the barrel of the bobbin, or upon the thread wound thereon, by a spring, *g*. This spring is secured at one end to the shuttle by the screw *b*, and at the other it is hinged to a short arm, *x*, attached rigidly to the friction-plate, the arm *x* making such an angle with the friction-plate that when the parts are in the position represented in Fig. 2 the spring shall draw the plate down upon the bobbin and produce friction thereon, and when the friction-plate is thrown into the position seen in Fig. 3 the arm *x* shall pass the center and hold it in the position seen in this figure.

The tension of the spring *g* may be adjusted so as to produce more or less friction upon the bobbin by the screw *b*, and to relieve this friction, should it at any time become excessive, the thread from the bobbin is passed through

the hole *n* in the presser-plate down beneath the lip *S* and out of the hole *f* in the shuttle, and should the pressure on the bobbin at any time exceed the amount to which the spring *g* is adjusted the thread *c* will raise the plate *i* sufficiently to relieve the bobbin of the extra pressure and allow the thread to render.

In shuttles, as ordinarily constructed and operated, it is evident that as the thread passes from the bobbin out of the shuttle it will draw perpendicularly from that point of the bobbin only which is opposite to the hole in the shuttle, and that from all other points of the bobbin it will draw obliquely, and this produces great unevenness in the tension upon the shuttle-thread. To remedy this I pass the thread over a curved guide, from which it passes to the hole in the shuttle, and by this means is drawn perpendicularly from all parts of the bobbin, Fig. 1.

In the shuttle represented in the accompanying drawings the curved guide *o* is made in one piece with the presser-plate *i*; but it is obvious that they may be made independent the one of the other without altering the spirit of my invention. It will be observed that immediately over the screw *b*, by which the tension of the spring *g* is adjusted, the shuttle is perforated with a hole, *k*, through which a screw-driver may be inserted for the purpose of turning the screw and adjusting the tension of the spring, the shuttle being so placed in the race that the hole *k* shall be uppermost, as seen in Figs. 1, 2, and 3. By this means the tension upon the shuttle-thread may be adjusted without removing the shuttle from its race or breaking the thread for the purpose.

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

Producing tension upon the shuttle-thread by means of the pressure-plate *i* and spring *g*, constructed and combined substantially as above described.

L. W. LANGDON.

Witnesses:

SAM. COOPER,
P. E. TESCHEMACHER.