F. A. CHURCHILL.

Improvement in Shuttle for Sewing-Machines.

No. 128,017. Patented June 18, 1872.

Fig. 1

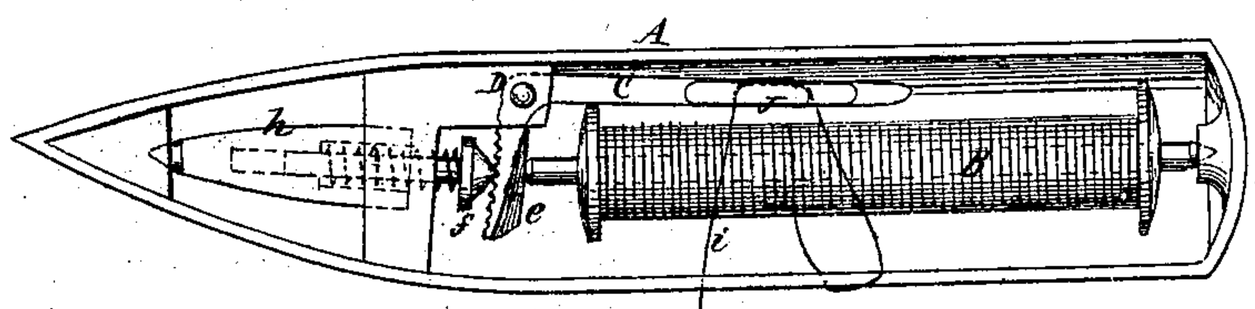


Fig. 2

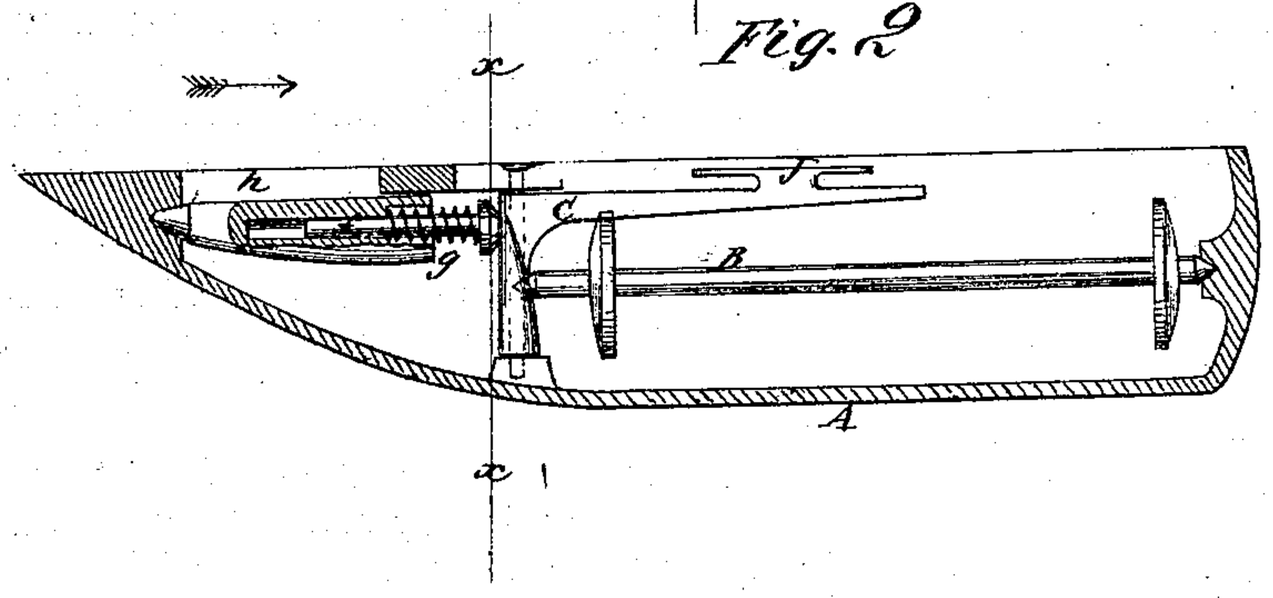
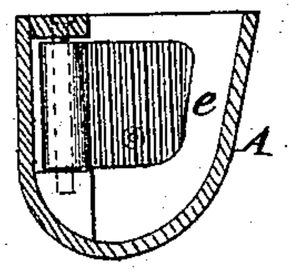


Fig. 3



Witnesses:

A. W. Almquist
Geo. H. Maber

Inventor:

F. A. Churchill

Per Munn & Co

Attorneys.

UNITED STATES PATENT OFFICE.

FREDERIC A. CHURCHILL, OF PITTSFIELD, MASSACHUSETTS.

IMPROVEMENT IN SHUTTLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 128,017, dated June 18, 1872.

Specification describing a certain Improvement in Sewing-Machine Shuttles, invented by FREDERIC A. CHURCHILL, of Pittsfield, in the county of Berkshire and State of Massachusetts.

The object of this invention is to provide efficient and convenient means for applying and varying the friction in sewing-machine shuttles, for regulating the tension of the thread; and it consists in a bent lever operating in connection with an adjustable spring-spindle, the construction and arrangement being as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a top view of a sewing-machine shuttle constructed according to my invention. Fig. 2 is a vertical longitudinal section of the shuttle. Fig. 3 is a vertical cross-section of Fig. 2 taken on the line *x x*.

Similar letters of reference indicate corresponding parts.

A represents the shell or case of the shuttle. B is the spool. C is a bent lever, whose fulcrum is at the point D. The short end *e* of this lever is serrated or indented, and forms a slightly obtuse angle with the long end, as seen. *f* is a spring-spindle, with a pointed end adjustably confined in a tube, *h*, or otherwise arranged so that it may be moved either from or toward the spool-pivot, and by moving increase or diminish the tension of the spiral spring *g* around the spindle *f*, and thereby increase or diminish the friction on the pivots of the spool. This action makes the short end *e* a lever of the second degree, the point D still being the fulcrum, the spool-pivot the resistance, and the spindle *f* the power applied. *i* is the thread, which is connected with the long end of the lever by means of the cleat J, around which the thread passes, as seen in Fig. 1.

It will be seen that the more friction there is on the pivots of the spool the more tension the thread will have, and that this friction can be adjusted in the nicest manner.

I am aware that a spring has been employed in connection with the spool-pivot of a sewing-machine shuttle which gives a uniform degree of friction; but I am not aware that such device has been made adjustable, or that the friction on the pivots may be increased or diminished at pleasure.

The spool may be supported on journals, and the adjustable friction applied thereto, or it may be applied to one or both of the flanges of the spool; but I prefer the arrangement shown.

I do not limit or confine myself to the precise form and arrangement described, as they may be varied in many ways without departing from my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The bent lever C, with the cleat J and adjustable spindle *f*, in combination with the spool of a sewing-machine shuttle, when the same are constructed and arranged to operate substantially as and for the purposes described.

The above specification of my invention signed by me this 4th day of November, 1871.

FREDERIC A. CHURCHILL.

Witnesses:

GEO. W. MABEE,

T. B. MOSHER.