

J. COIGNARD.
Sewing Machine Shuttle.

No. 40,736.

Patented Dec. 1, 1863.

Fig. 1.

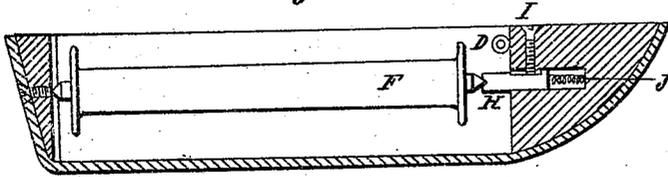


Fig. 2.

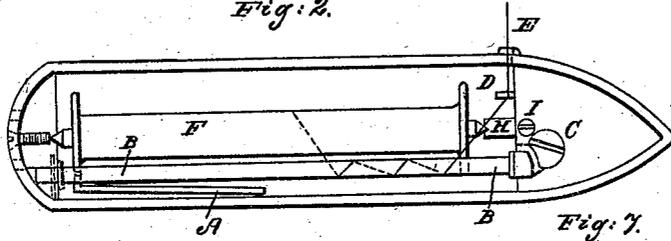


Fig. 6.

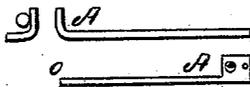


Fig. 7.



Fig. 3.

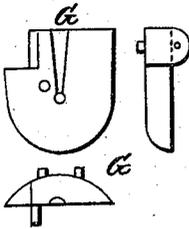


Fig. 5.

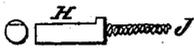
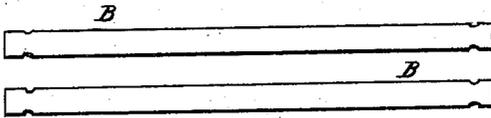


Fig. 4.

Inventor:

Joseph Coignard
by A. P. H. K. S.
his atty.

Witnesses:
J. L. Coombs
S. M. Marsh.

UNITED STATES PATENT OFFICE.

JOSEPH COIGNARD, OF NANTES, FRANCE.

IMPROVEMENT IN SHUTTLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 40,736, dated December 1, 1863.

To all whom it may concern:

Be it known that I, JOSEPH COIGNARD, of Nantes, in the Empire of France, have invented a new and useful Improvement in Shuttles for Sewing-Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved shuttle; Fig. 2, a plan view of the same, showing the face which, when the shuttle is in operation, is in contact with or bears against the shuttle-race. Figs. 3 and 4 are details representing respectively the butt-end of the spool or bobbin and its spring-socket; Figs. 5, 6, and 7, also details, representing respectively the tension-roller and the means used for maintaining it in place.

My invention relates to that class of sewing-machines in which a shuttle is employed; and it consists in certain devices whereby a more perfect tension can be obtained than could be done by the means heretofore in use.

The objection to shuttle sewing-machines consists in the necessity of frequently varying the tension of the shuttle-thread according to the material used, which with the means heretofore in use is always a troublesome operation; but the great deficiency and fatal objection is due to the chafing of the thread when passed at great speeds through the tension-holes now generally used, whereby the thread is weakened to such extent as to cause frequent breakages. On the other hand, the harsh tension produced by passing the thread through sharp-edged holes does not always yield the thread in conformity with the movements of the shuttle, the consequence of which is the "missing" of stitches. By my improvement I have remedied these and other defects.

To enable others to make and use this invention, I shall now proceed to describe the construction and operation of my improved shuttle-tension device.

The shuttle represented in the accompanying drawings is double the size that are usually made. It consists of a case in the beak of which is a cylindrical aperture designed to contain a piston, H, backed by a helical compression-spring, J. The piston is capable of a play in the direction of its axis, but is con-

finued within the cavity or aperture above referred to by means of a screw or pin, I.

On the outer end of the piston there is a central hole, in which the pointed end of the bobbin-axle F rests, the opposite end of the said axle bearing in a cavity or socket in the opposite or butt end G of the shuttle-case. To enter or remove the bobbin it is only necessary to press it slightly against the piston, which, compressing the spring in the rear thereof, will free the axle from its hold in the cavity in the butt of the shuttle-case, and thus allow the removal of the bobbin. The same operation is performed for inserting the bobbin.

On one side of the bobbin there is provided a polished tension-roller, B, held in place by means of a watch-spring and hook A at the one end and by the head of the screw C at the other end, the head of the screw being indented to allow of the taking out of or replacing of the tension-roller in the shuttle-case, as shown. The roller has annular bearings to allow it freely to revolve on its axis. The thread from the bobbin before issuing from the shuttle-case is passed through an eye, D, and then through a hole or holes in the shuttle-case, each of which is lined with a polished eyelet.

The operation of this device will be readily understood from the drawings. The thread, instead of being carried through the series of holes against the sharp edges of which it is rubbed, is carried over a smooth and freely-revolving roller, so that the least strain upon the thread will cause it to be unwound with a degree of tension proportionate to the number of turns or windings upon and around the roller.

By the employment of this device the thread is not liable to be chafed or broken by the sudden jerks of the shuttle. For further security against the deterioration of the thread, I form a smooth lining of the shuttle-case by means of a metallic eyelet.

I am aware that the bobbin has been held by means of springs; but such mode of holding the bobbin is liable to the objection, particularly in large machines, that their strength is inadequate, and often break; but my mode of holding the axle by means of a piston effectually remedies this defect.

Having thus fully described my invention, I claim—

In sewing-machine shuttles of otherwise ordinary or suitable construction, the combination of a polished tension roller or cylinder held within the cavity of the shuttle, as described, with polished metallic eyelets lining the holes of the shuttle, through which the thread passes, substantially as herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

JOSEPH COIGNARD.

Witnesses:

I. PINSON,
A. DARRY.