(No Model.)

J. H. BULLARD.

SHUTTLE FOR SEWING MACHINES.

No. 248,701. Patented Oct. 25, 1881.

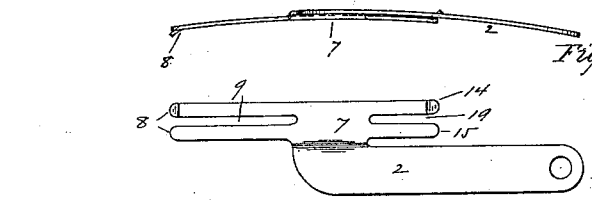

Fig. VI.

Fig. V.

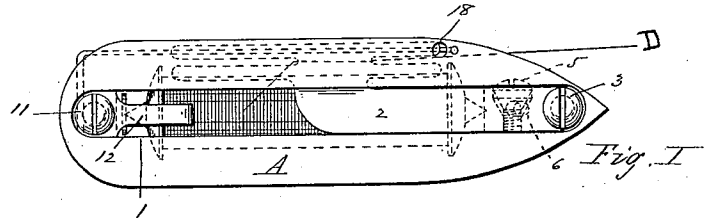

Fig. I.

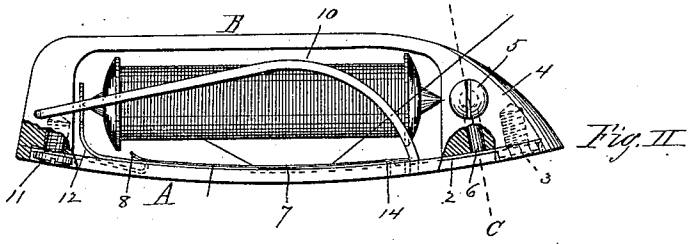

Fig. II.

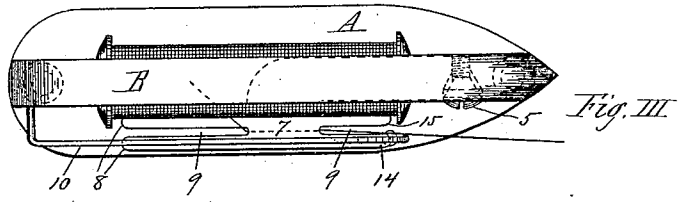

Fig. III.

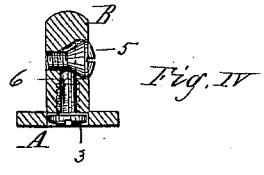

Fig. IV.

Witnesses.
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UNITED STATES PATENT OFFICE.

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SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 248,701, dated October 25, 1881.

Application filed July 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BULLARD, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Shuttles for Sewing-Machines, of which the following is a specification and description.

The object of my invention is to facilitate the adjustment of tension of the thread when unwound from the shuttle-bobbin, and I accomplish this by the means substantially as hereinafter described and illustrated in the accompanying drawings, in which—

Figure I is a front side view of a sewing-machine shuttle with the tension-spring secured in place. Fig. II is a plan or top view of the same with a portion of the front end broken away, and in section to show the adjusting-pin. Fig. III is a rear side view of the shuttle. Fig. IV is a transverse section of the front end of the shuttle at line C, showing the relative position of the adjusting-pin with the adjusting-screw. Fig. V is a plan view of the tension-spring. Fig. VI is an edge view of the same.

In the drawings, A represents the front plate of the shuttle, slottled, as at 1, to receive the springs 2 and 12, and also to reduce the weight of the shuttle, and B represents the back or rib of the shuttle, both of which are preferably of cast metal and made in one piece.

The bobbin may be held in place in the shuttle by a small spring, as 12, secured to the rear end of the shuttle by the screw 11, the free end of which spring extends up in rear of the long open space between the two ends of the shuttle, and is provided with a small recess or indentation to receive the pointed end of the bobbin, the other or opposite end of the shuttle being also provided with a similar recess to receive the other end of the bobbin.

The tension-spring, as 2, is secured to the end of the shuttle by the screw 3, in a position with its shank extending along in the slot 1 of the plate A, and about midway the length of the slot the portion, as 7, of the spring extends to one side of the slot and lies quite near to, or in contact with, the inside of the plate A, and at one side of the slot 1, and this portion of the tension-spring terminates at one end in two prongs, as 8, with a space or an opening, as 9, between them, with the outer prong turned upward a little or away from the plate A, as shown in Fig. II, and at the other end the spring terminates in two prongs, as 14 and 15, with a space or opening, as 19, between, and with the extreme end of the prong 14 bent into a small hole, as 18, in the plate A, to prevent the thread from being accidentally caught under that prong.

A hole is bored into the front end of the shuttle, on the line C of Fig. II, and a pin, as 6, is inserted therein, said pin extending from the upper side of the spring 2 to a conical-headed screw, as 5, turned into a threaded hole extending in from the side of the rib B at substantially a right angle to the pin 6, as shown clearly in Fig. IV, the screw-hole being counterbored to receive the tapered or conical screw-head.

When the spring 2 is secured in place by the screw 3 the shank of the spring lies in the slot 1 of the plate A, and the part 7 of the spring, together with its prongs at each end, lies just in contact, or nearly so, with the inner surface of the plate, with little or no pressure of said spring against the plate; but if the screw 5 be turned in, its conical head, as it comes in contact with the end of the pin 6, crowds the latter outward against the spring 2 and causes the part 7 to press against the inner face of the plate A with more or less force, according as the screw is turned in or out.

The shuttle-bobbin is inserted in place by forcing the free end of the spring 12 backward toward the rear end of the shuttle, and then placing the pointed ends of the bobbin, one into the slight recess in the forward end of the shuttle, and the other end into the slight recess in the free end of the spring 12, letting that end of said spring forward against the end of the bobbin.

To thread the shuttle the end of the thread is passed beneath the upturned end of the outer prong, 8, then passed along between that spring and the plate A, and pulled out from beneath the opposite prong, 14, into the space 19 between the prongs 14 and 15, and the end is then

passed inside the guard 10, over and against which the thread passes in being unwound from the spool in the operation of sewing. The shuttle is then placed in the carrier, and if the tension of the thread is not as desired it is only necessary to draw back the plate or slide over the shuttle-race, and with a screw-driver turn the screw 5 in one direction or the other, according as the tension is to be greater or less, and without removing the shuttle from its place in the carrier.

If desired, the bobbin may be made to revolve with more or less friction by turning the screw 11 in or out slightly, which has the effect to tilt the free end of the spring 12 more or less toward or from the bobbin, as desired.

The line D shows the position of the thread in the openings 9 and 19, and between the tension-spring and the front plate of the shuttle in passing from the bobbin, when the shuttle is threaded and in use.

It is evident that instead of an indentation in the forward end or shoulder of the shuttle to receive one pointed end of the bobbin, and a similar indentation in the free end of the spring 12 to receive the other pointed end of the bobbin, the two ends of the bobbin may have an indentation or recess to receive a point on the front shoulder of the shuttle, and upon the free end of the spring 12.

It is evident that instead of making the pin 6, which I here denominate a "gib," of a cylindrical and elongated form, like a pin or stud, as shown, it may be made of a globular or spherical form, and of a diameter to extend from the tapered or conical head of the screw to the inner face of the spring 2, and will then serve the same purpose and produce the same result.

Having thus described my invention, what I claim as new is—

In a sewing-machine shuttle, the combination, with the front plate of the shuttle, of a tension-spring secured to the end of said shuttle, and having a side extension lying contiguous to the inner face of said plate and parallel thereto, and with a longitudinal slot or opening in each end, a conical-headed adjusting-screw turned into a threaded hole in said shuttle, substantially parallel with the face of said spring, and a gib extending between the inner face of said tension-spring and said screw, whereby the movement either in or out of the head of said screw against the gib will cause the said tension-spring to press against the inner face of said plate with more or less force, substantially as described.

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Witnesses:
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