(No Model.)

W. R. PARSONS.

SEWING MACHINE SHUTTLE.

No. 264,333. Patented Sept. 12, 1882.

Fig. 1,

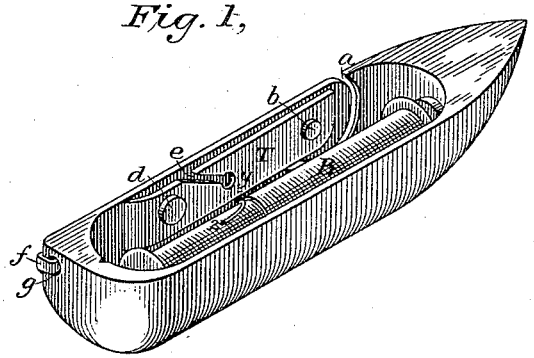


Fig. 2,

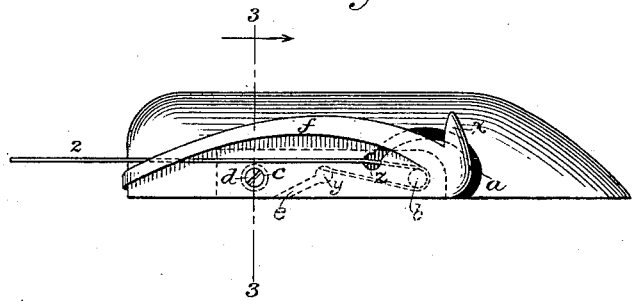
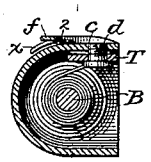


Fig. 3,



WITNESSES

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WINSLOW R. PARSONS, OF WATERLOO, IOWA.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 264,333, dated September 12, 1882.

Application filed January 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, WINSLOW R. PARSONS, a citizen of the United States, residing at Waterloo, in the State of Iowa, have invented a new and useful Improvement in Sewing-Machine Shuttles, of which the following is a specification.

This invention relates to improvements in the under-thread guides and under tension devices or shuttle-tensions of those sewing-machines in which the ordinary form of sewing-machine shuttle reciprocates or oscillates in a horizontal path.

My present invention consists, first, in a sewing-machine shuttle having, in connection with an internal tension-spring, a novel combination of thread-guides, including a peculiarly-curved threading-slot in the top of the shuttle, to facilitate threading and afford an extended smooth clamp for the thread; secondly, in the combination, with a shuttle having a curved threading-slot in its top, as aforesaid, of an internal tension-spring of lever form and a tension-screw adjustable within a screw-hole in the top of the shuttle, to provide for regulating the tension with facility and without complication of parts; and, thirdly, in an efficient guard against unthreading, in the form of a close-fitting finger on a thread-check, which is the only part attached to the exterior of the shuttle, as hereinafter more particularly described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of an ordinary sewing-machine shuttle provided with my improved tension device. Fig. 2 is a top view of the same; and Fig. 3 is a transverse section thereof on the line 3 3, Fig. 2.

Like letters of reference indicate corresponding parts in all the figures.

I construct the shuttle in the first place with a threading-slot, *a*, Figs. 1 and 2, of peculiar form. This slot extends from the open edge of the shuttle, near its front end, in a half-circle curve, transversely to about the middle of the shuttle, and thence extends backwardly to at or about mid-length of the shuttle, where it terminates in a round enlargement, *z*, through which the thread escapes during the effective forward movements of the shuttle.

A stud-pin, *b*, is located at or near the center of the said half-circle curve of said slot *a*, and is made to project downward from the top of the shuttle (inside) about one-sixteenth of an inch, and a small hole, *c*, is drilled in the top of the shuttle, near its rear end, and is tapped to receive a tension-screw, *d*, Fig. 3, inserted from within outwardly, and having a nicked point. Said stud-pin *b* and tension-screw *d* pass through and support the respective ends of a longitudinal tension-spring, T, within the shuttle, suitable drill-holes in said spring being fitted to said pin and screw. This tension-spring is constructed with a threading-slot, *e*, terminating in a round guide enlargement, *y*, and said slot is inclined forwardly and the rearwardly-projecting point above it is bent downward, so as to further facilitate drawing the thread into said guide enlargement. Said tension-spring is further constructed, as clearly shown in Fig. 1, with an upwardly-curved rear end, which forms a transverse knife-edge fulcrum therefor adjacent to said tension-screw *d*, tending to keep the clamping-surfaces parallel, and enabling said screw to act on the front end of the tension-spring with multiplied scope. This front end of the tension-spring, which is its effective portion, and the coacting inner surface of the shuttle are flat polished surfaces. It is only necessary, therefore, to make the said guide enlargements *z y* of the threading-slots and the said stud-pin *b*, which is also a thread-guide, of ample size and free from cutting-edges or roughnesses, which is readily done, in order to afford by this means a smooth and even tension, which will allow inequalities of the thread to pass through easily, and will not cut, fray, or wear the thread. The tension-screw *d* is, moreover, so located as to be turned readily without removing the shuttle from the machine, being rendered conveniently accessible by simply exposing the top of the shuttle, as shown by the top view, Fig. 2.

The shuttle is also provided with an external curved spring, *f*, to form a thread-check. This thread-check is soldered on or attached in like manner immediately behind the outer end of the slot *a* at the front end of the top of the shuttle, as shown in Fig. 2, being adapted to yield to a limited extent, and held at its rear end by hooking its extremity into a hole, *g*, Fig. 1, in the rear end of the shuttle.

To keep the thread 2 from escaping from the

threading-slot *a* during the backward movements of the shuttle, I form on the thread-check *f* a short rearwardly-curved lateral finger, *x*, projecting from its front end across said threading-slot, and close enough to the shuttle to keep the needle-thread from catching thereon.

To thread the shuttle, it is held in the position in which it is shown by Fig. 1, and the thread 2 is taken from the bobbin B and drawn first through the threading-slot *e* into the guide *y*, and then into the slot *a*, and along the latter under the guard-finger *x*, around the guide-pin *b* and into the guide *z*. From this it issues during the forward movements of the shuttle, as shown by Fig. 2, which also clearly shows by dotted lines the direction of the thread within the tension device.

Having thus described my said invention, I claim as new—

1. The tension-spring T, constructed with the threading-slot *e*, terminating in a guide enlargement, in combination with a shuttle having a curved threading-slot, *a*, terminating in a like guide enlargement, and a guide-pin, *b*, at or near the center of a portion of the curve of said slot *a*, substantially as described.

2. In combination with a shuttle having a curved threading-slot in its top and an internal guide-pin at or near the center of a portion of the curve of said slot, an internal tension-spring having a fulcrum at one end and a hole near its other extremity to embrace said guide-pin, and an intermediate tension-screw extending through said tension-spring into a screw-hole in the top of the shuttle, and having an exposed nicked point, substantially as herein specified, for the purposes set forth.

3. In combination with a shuttle constructed with a threading-slot in its top, a thread-check having a curved guard-finger which projects across said threading-slot close to the surface of the shuttle, substantially as shown, for the purpose set forth.

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Witnesses:

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