

(No Model.)

E. H. SMITH.

SEWING MACHINE SHUTTLE.

No. 296,790.

Patented Apr. 15, 1884.

Fig. 1.

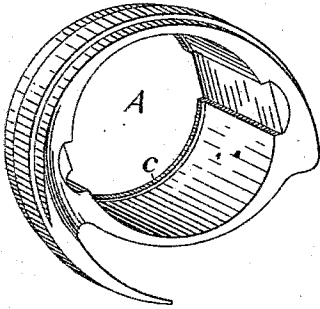


Fig. 2.

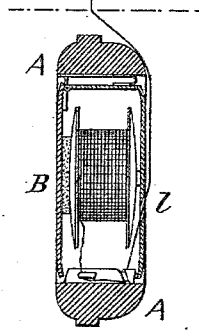


Fig. 3.

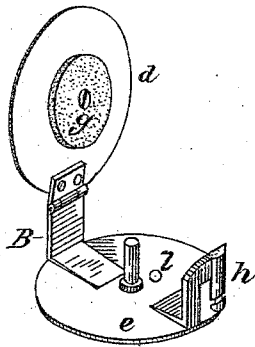


Fig. 4.

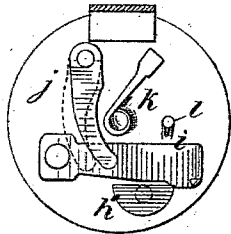
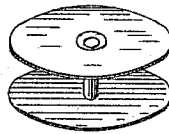


Fig. 5.

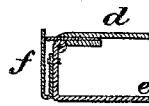


Fig. 6.

ATTEST:

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EARLE H. SMITH, OF NEW YORK, N. Y.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 296,790, dated April 15, 1884.

Application filed November 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, EARLE H. SMITH, of the city of New York, N. Y., have invented certain new and useful Improvements in Sewing-Machine Shuttles, whereof the following is a specification.

My invention relates to a circular shuttle and to a removable thread-case therefor, and its accessories.

Referring to the annexed drawings, Figure 1 is a perspective view of the shuttle with thread-case removed. Fig. 2 is a transverse section of the shuttle with thread-case inserted. Figs. 3 and 4 show thread-case separately and means of tension. Fig. 5 shows one plate of a thread-case with further means of tension. Fig. 6 is a detail sectional view, exhibiting details of hinge and spring of thread-case.

The shuttle A is circular in contour, and its movement is around its axis. It has a large cavity or thread-place for receiving a removable thread-case, B, which moves with the shuttle, and avoids removing the shuttle from the machine in replenishing it with thread. Said cavity extends through the shuttle from side to side, excepting a thin rim, *c*, at the back, forming a stop, which serves as a means of preventing the thread-case escaping at the rear when inserted in the shuttle from the front.

The thread-case shown in the drawings consists of two plates, *d e*, one of which is hinged, and a spring, *f*, applied at the hinge, tends to force the plate toward its fellow, so as to clamp a bobbin between them with a light pressure. A piece of cloth, *g*, or other material may be used as a pad, to produce a slight friction on the bobbin, to prevent the same from turning too freely. The thread-case is removable from the front of the shuttle, by which is meant the free or exposed side.

I prefer to lead the thread out at the rear side of the thread-case and shuttle, as by so doing the shuttle is adapted for use both in machines wherein the sewing is fed across the shuttle parallel to its axis of revolution and in those where it is fed at right angles to such axis. By "rear" of the shuttle is meant that side on which it is engaged or from which it is driven. The thread, before escaping from the thread-case, is led around a suitable guide or

guide-post, *h*, affording a slight tension. From thence it passes out through an orifice in the side of the thread-case, so located therein that when placed in the shuttle such orifice will be at or nearly in the center of the shuttle, and thence to the sewing, through the needle-throat, in the usual manner. Where more tension is needed, a spring is used—such as that seen at *i* in Fig. 5, for example—under which the thread is led before passing out. The pressure of such spring *i* is adjustable by means of a pivoted arm, *j*, as indicated by dotted lines, which show the position for the lightest pressure.

To avoid having the thread to draw around abrupt corners in passing out, the thread-delivering orifice *l* is pierced obliquely through the thread-case, and the tension device and guide-post are so arranged in the thread-case with respect to the relation of the latter to the shuttle, that the thread, in drawing from the shuttle, (as at the moment of tightening the stitch when operated in a machine,) moves as nearly as possible in a direct line through the thread-case to the material being sewed—a great desideratum when using a large waxed thread.

Instead of a bobbin, a cop may be used, and is preferable in sewing with a waxed thread.

In using a cop, an eye, *k*, Fig. 5, takes the place of the central pin occupied by the bobbin, and the guide-post is shaped like a rivet, with a space under the head for the thread to pass freely around its shank, (dotted.)

The tension and thread-case are capable of complete detachment and removal without removing the shuttle from its place when in operation.

I claim as my invention—

1. The combination, with a circular shuttle having its thread-cavity open on the rear side, of a thread-case therefor, adapted for carrying a bobbin or cop, means of preventing the thread-case from escaping at the rear, and permitting its removal from the front side of the shuttle, and a thread-delivering orifice in the thread-case at the rear.

2. The combination, with a circular shuttle and removable thread-case therefor, of means for preventing the removal of the thread-case except from the front side of the shuttle, and

said thread-case provided with a tension device and guide-post, and with a thread-delivering orifice in the thread-case at the rear.

3. In a thread-case for a circular shuttle, the combination of two plates, one of which is hinged, and adapted, by means of a spring, to make a light pressure on an inclosed bobbin, and said thread-case provided with an independent tension on one of said plates.

4. The combination, with a circular shuttle, of a thread-case comprising two plates, adapted to inclose a bobbin or cop between them, a tension device and guide-post on one of said

plates, and a thread-delivering orifice pierced obliquely through the thread-case to permit the shuttle-thread to pass directly from the tension to the material being sewed, as shown and described.

5. The combination, in a thread-case of a rotary shuttle, of a guide-post, *h*, spring *i*, and adjustable arm *j*, substantially as described.

EARLE H. SMITH.

Witnesses:

JAMES M. TULLEY,
GEORGE HASELTINE.