(No Model.)

LE ROY WILLIAMS.

SHUTTLE FOR SEWING MACHINES.

No. 378,855. Patented Feb. 28, 1888.

Fig. 1.

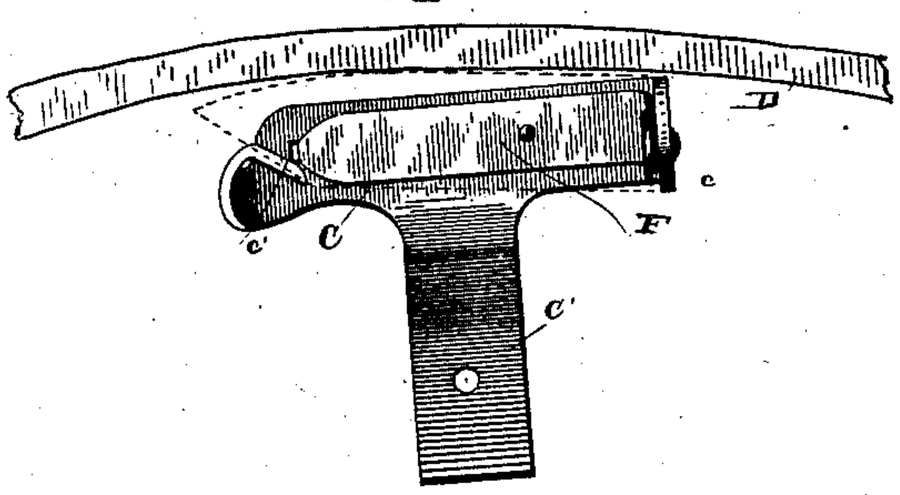


Fig. 2.

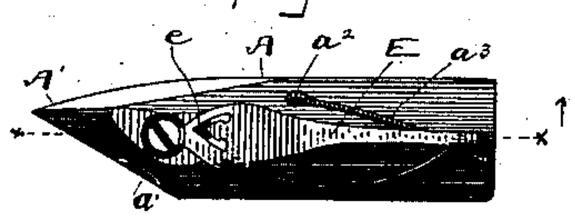


Fig. 3.

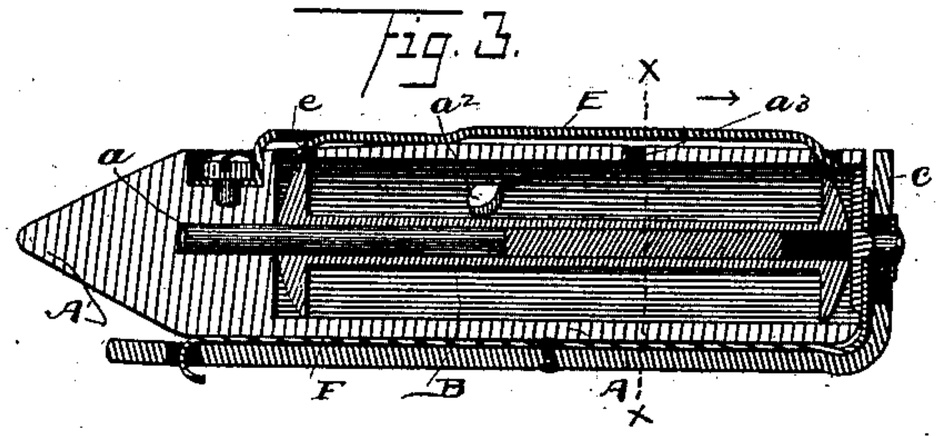


Fig. 4.

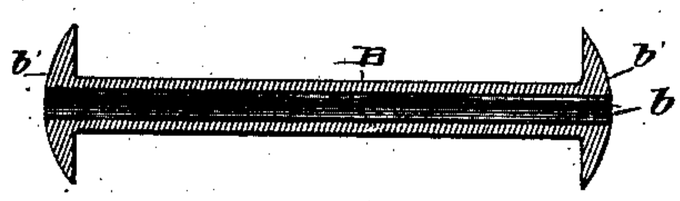
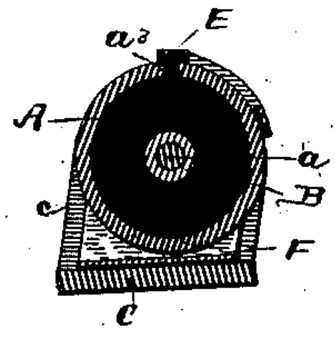


Fig. 5.



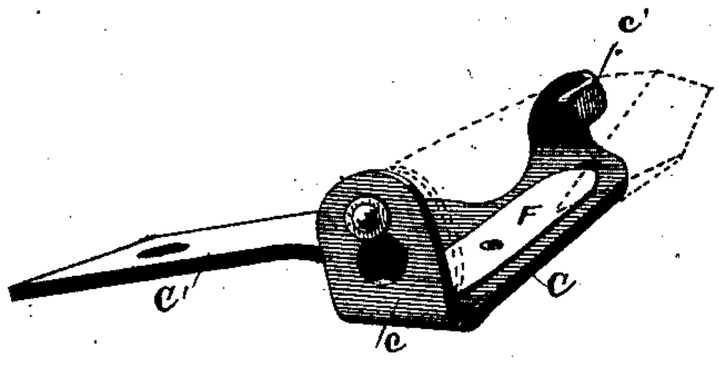


Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

LE ROY WILLIAMS, OF LANSING, MICHIGAN, ASSIGNOR TO THE WHITE SEWING MACHINE COMPANY, OF CLEVELAND, OHIO.

SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 378,855, dated February 28, 1888.

Application filed May 18, 1886. Serial No. 202,532. (No model.)

To all whom it may concern:

Be it known that I, LE ROY WILLIAMS, of Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Sewing-Machine Shuttles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in sewing-machine shuttles in which a shuttle in the main cylindrical has attached to the solid end thereof and extending centrally into the cylinder a spindle, on which latter is journaled the bobbin, the shuttle being mounted on a horizontally-vibrating carrier, to the end that the device is convenient, durable, and operated with little friction.

In the accompanying drawings, Figure 1 is a plan view of the carrier and race, portions of each being broken away. Fig. 2 is a plan of the shuttle. Fig. 3 is an elevation in horizontal section through the center of the shuttle and corresponding part of the carrier. Fig. 4 is an elevation in longitudinal section through the center of the bobbin. Fig. 5 is an elevation in transverse section on the line of *x x*, Fig. 3. Fig. 6 is a view in perspective of the shuttle-carrier, a portion of the arm thereof being broken away.

A represents the shuttle, which is a hollow cylinder open at the rear end, and having at the other end a solid pointed head, A′. To the solid end is rigidly attached the spindle *a*, that extends centrally inside of and to near the open end of the cylindrical part of the shuttle. On the spindle is mounted loosely the bobbin B, the same having a spindle-orifice, *b*, and conical heads *b′*, that in holding the bobbin endwise are engaged, respectively, by the carrier and head of the shuttle, so near the axial line of the bobbin that the friction at these points is reduced to a minimum.

C is the carrier, and is of the horizontally-vibrating variety, only a portion of the carrier-arm C′ being shown. The carrier at one end has an upwardly-projecting lip, *c*, that engages the open end of the shuttle and holds the bobbin in place on the spindle. The other end of the carrier has a lip, *c′*, that is turned back in the form of a hook and engages the shuttle in a niche or recess, *a′*, made in the head of the shuttle. The shuttle rests upon the carrier, and is held from moving outward by the race D. Of course there is sufficient end-play in the shuttle to allow the thread to pass the lips *c* and *c′*. The shuttle, on the top side thereof, has attached the spring E, the same resting loosely on the shuttle between the fastenings at the ends of the spring. A point of the spring, *e*, is depressed into a recess in the shuttle. The shuttle has a hole, a^2, and a slit, a^3, the latter leading from the hole obliquely under the spring to the open end of the shuttle.

When the bobbin is placed in the shuttle, the end of the thread is retained in the fingers, and the thread is drawn forward into and along the slit a^3 until the thread has passed the point *e*, after which the thread is drawn rearward and made to mount the point, and is then in position for use. The spring E is substantially the same as heretofore used.

A spring, F, may be attached to the shuttle-carrier to cushion the shuttle and prevent the latter from rattling; but such springs for this purpose are old, and I therefore make no claims, broadly, to either of these springs.

What I claim is—

1. The combination, with a shuttle having a cylindrical shell open at one end, a spindle rigidly secured to the head of the shuttle, and a spool mounted loosely on the spindle, of a carrier for operating the shuttle and retaining the spool in the shuttle, substantially as set forth.

2. The combination, with a shuttle, the same having a pointed head and substantially a cylindrical shell open at the rear end, a spindle rigidly secured to the head, and a bobbin mounted loosely on the spindle inside the shell, of a horizontally-vibrating carrier, the latter having suitable projections for engaging and moving the shuttle and holding the bobbin in place on the spindle, substantially as set forth.

3. The combination, with a shuttle having an open end, a spindle rigidly secured to the

head of the shuttle, and a bobbin arranged substantially as indicated, of a horizontally-vibrating carrier, the same having lips for engaging the shuttle, the rear lip also serving to retain the bobbin in the shuttle, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 4th day of May, 1886.

LE ROY WILLIAMS.

Witnesses:
CHAS. H. DORER,
A. E. LYNCH.