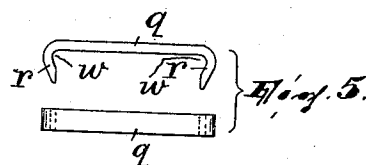
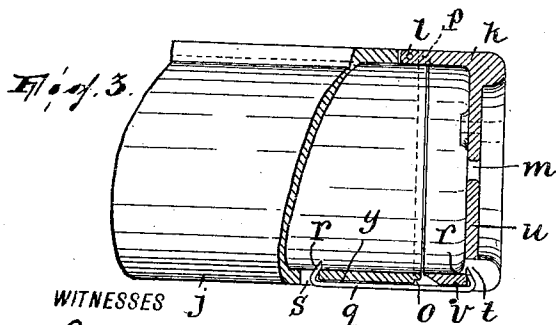
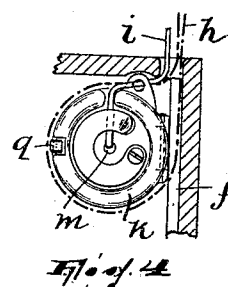
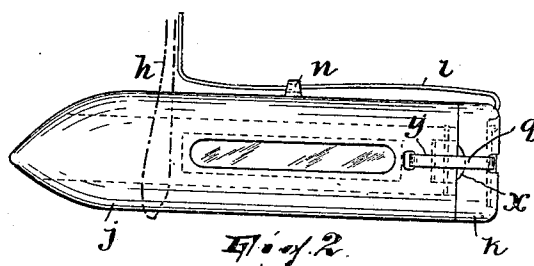
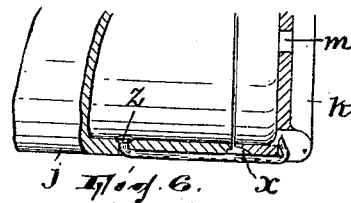
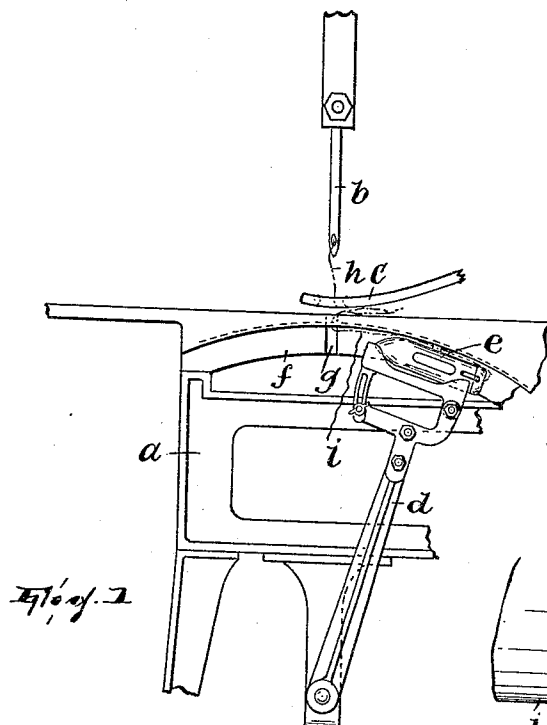


933,062.

W. COCHRAN.
SHUTTLE FOR SEWING MACHINES.
APPLICATION FILED NOV. 16, 1908.

Patented Sept. 7, 1909.



WITNESSES
Jm Dell.
Elise Kaufmann.

INVENTOR
William Cochran,
BY
John Seward
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM COCHRAN, OF PATERSON, NEW JERSEY.

SHUTTLE FOR SEWING-MACHINES.

933,062.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed November 16, 1908. Serial No. 462,797.

To all whom it may concern:

Be it known that I, WILLIAM COCHRAN, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Shuttles for Sewing-Machines; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In some of the larger types of sewing machine shuttles, as in shuttles for machines for lacing jacquard cards, for instance, the shuttle is provided at its rear end with a hinged cap which is held closed by a spring clip riveted against the inside of the shuttle wall and having a lug which snaps into locking engagement with an internal shoulder on the cap when the cap is closed. In practice, the clip becomes dislocated, worn or broken, and thus gives rise to a number of troubles requiring constant attention to keep the shuttle in proper working condition, among which may be mentioned that it sooner or later permits an appreciable space to form between the cap and shuttle body in which the encompassing thread loop often catches, and that, at best, a careless attendant, in charging the shuttle, is likely to allow one of the coils to lie between the clip and the shuttle wall, in both of which instances the machine has to be stopped to clear the thread or cord.

Referring to the accompanying drawing, Figure 1 is a side view of enough of a jacquard card lacing machine to illustrate the present invention; Fig. 2 is a side view of a shuttle constructed in accordance with the present invention, the shuttle thread or cord being shown in full lines and a loop of the needle thread or cord in dot-and-dash lines; Fig. 3 is an enlarged view, partly in side elevation and partly in section, of the butt end of the improved shuttle; Fig. 4 shows the improved shuttle in rear elevation and its race in section; Fig. 5 is a detail view of the clip used; and, Fig. 6 is a sectional view illustrating a modification of the improved shuttle.

Referring to Fig. 1, *a* is a jacquard card lacing machine; *b* its needle; *c* the presser

foot; *d* a swinging arm carrying the shuttle *e*; *f* the shuttle race and *g* the slot in which the needle *b* moves to form the loop in the needle thread *h* for the passage of the shuttle *e* and the consequent reception by said loop of shuttle thread *i*. The shuttle *e*, as usual, comprises a hollow-shell or body *j*, pointed at one end and open at the other, and a cap or cover *k* for its open end, the cap being hinged to the body *j* at *l* and having an axial opening *m* for the shuttle thread *i* which is extended through a guide *n* on the shuttle body; as usual, one of the parts *j* and *k* is formed with a rabbet *o* on the outside and the other with a rabbet *p* on the inside, so that when the cover is closed it will be kept in true alinement with the shuttle body.

In furtherance of my invention I provide a clip preferably like that shown in Fig. 5. This clip, *q*, is a piece of metal formed straight throughout except at its end portions *r* which are bent off in substantially the same direction and so as to converge slightly toward each other. On the side of the shuttle opposite the hinge *l* two recesses *s* and *t* are formed, one in the shuttle body and the other in the cover, to receive the bent-off ends *r* of the clip. The recess *s* is shown in Fig. 3 as a hole penetrating the shell or body *j*, while the recess *t* is likewise a hole penetrating the cover in the angle between the flat wall *u* of the cover and its cylindrical wall *v*. The recesses *s* and *t* are placed slightly farther apart than the most adjacent points in the ends *r* of the clip, so that when the clip has one end *r* hooked in one of the recesses and the other end is forced into the other recess the cover will be drawn securely against the shell or body *j*. Each end *r* of the clip is furthermore so bent off, *i. e.*, at an acute angle to the body-portion thereof, as to produce a pocket *w* which will receive the edge of the shell or body *j* and of the cover at the recess *s* or *t* and prevent the clip being removed without force being applied under it, while allowing the clip to be forced into locking position. The clip is intended to be removed by inserting a sharp pointed implement under it, as in the notch *x* (Fig. 2). I preferably channel the shuttle body and cover, as at *y*, to receive the straight part of the clip, so that its outer face lies approximately flush with the outer surface of the shuttle.

The clip already described is shown as flat

(see Fig. 5). It may be formed round in cross-section as illustrated in Fig. 6, and, as further illustrated in this figure, instead of being bodily detachable, one end may be riveted in place, as at *z*, the other end being constructed to interlock with one of the two parts of the shuttle in the same manner as either end of the clip *q*. In this instance, the clip has its free end sprung out of engagement with the shuttle by a sharp pointed implement the same as the clip *q*, whereupon the clip is turned on its rebent end as a pivot to allow the cover to be swung back.

On a view to Fig. 2 it will be seen that the clip being on the outside of the shuttle and crossing the joint between its end and cap, the loop from the needle thread will be prevented by said clip from becoming caught in the crevice at the joint; moreover the improved locking means is not only inexpensive to maintain and not likely to get out of order, but it leaves the inside of the shuttle body free or clear of projections interfering with charging the shuttle in such manner that the thread or cord will not feed properly.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a shuttle for sewing machines and the like, the combination of the shuttle body, the cap and a clip arranged on the outside of the shuttle across the joint between the body and cap and securing the cap in closed relation to the shuttle-body, and having one end engaged in the shuttle-body and the

other in the cap, one of said ends lying in a line forming an acute angle with the body-portion of the clip, substantially as described.

2. The combination of a shuttle-body open at one end, a cap covering its open end and a clip having its ends turned off in substantially the same direction and being arranged against the outside of the shuttle across the joint between the shuttle body and cap, said body and cap having recesses opening outwardly and said clip having its ends projecting into the recesses and one of them lying in a line forming an acute angle with the body-portion of the clip, substantially as described.

3. The combination of a shuttle-body open at one end, a cap covering its open end, said shuttle-body and cap having holes in their longitudinal walls, and a clip having its ends turned off in substantially the same direction and being arranged against the outside of the shuttle across the joint between the shuttle body and cap, said holes receiving the bent-off ends of the clip and one of said bent-off ends lying in a line forming an acute angle with the body-portion of the clip and projecting under the edge of the hole receiving it, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 12th day of November, 1908.

WM. COCHRAN.

Witnesses:

WM. D. BELL,
JOHN W. STEWARD.