(No Model.)

A. CLAUS.

LOOM SHUTTLE.

No. 344,625. Patented June 29, 1886.

Fig: 1.

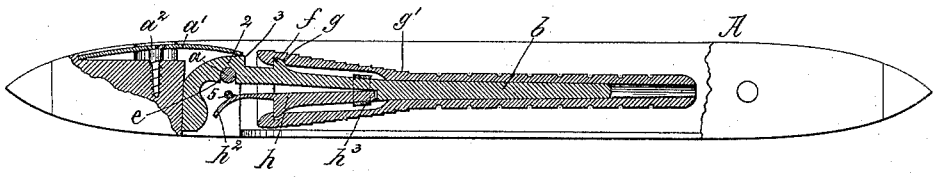
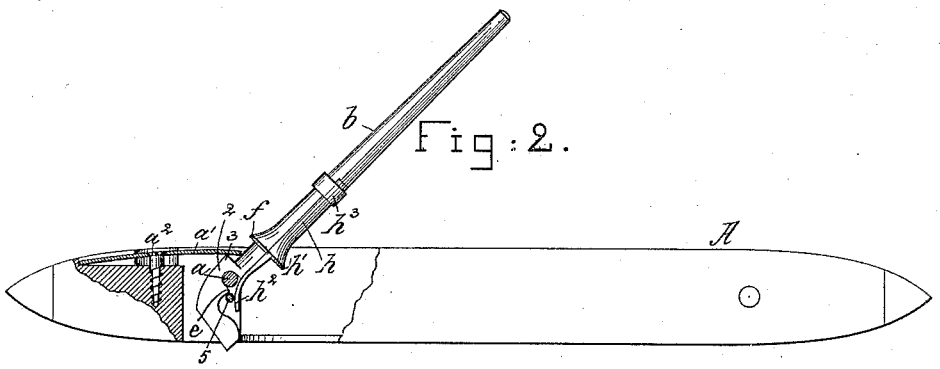


Fig: 2.



Witnesses.
Arthur Lippincott.
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UNITED STATES PATENT OFFICE.

ADOLPH CLAUS, OF LOWELL, MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 344,625, dated June 29, 1886.

Application filed January 17, 1885. Serial No. 153,182. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH CLAUS, of Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to that class of shuttles that have spindles which are adapted to engage a bobbin having an inside groove.

The spindles of the class of shuttles referred to, so far as I am aware, have prior to my invention been made from cast-steel, as the spring having one of the bobbin-engaging projections of a spindle is subjected to considerable strain.

In accordance with my invention the main part of the spindle, which may be of cast metal, has a loosely-connected auxiliary spindle-section which is readily detachable from the main part of the spindle, and to operate the said spindle-section and cause it to engage the usual inside groove when the spindle is turned down into the shuttle it is provided with a curved tail-piece which strikes a stud located just below the usual pivot-pin of the shuttle-spindle.

The invention consists in the shuttle-spindle constructed and operating substantially as hereinafter particularly set forth and claimed.

Figure 1 represents a loom-shuttle embodying my invention, part of the body of the shuttle being broken out, the spindle and bobbin and their co-operating parts being in section, the bobbin being shown locked on the spindle and within the body of said shuttle; and Fig. 2 is a similar view with the spindle turned out from the shuttle-body and the bobbin removed, the spindle being in elevation.

The shuttle-body A, of any preferred or usual construction, is provided with a pivot-pin, *a*, passing transversely through it, and with a flat spring, *a'*, secured thereto by a screw, a^2, the free end of the said spring acting upon one edge of the head 2 of the spindle or against the corner 3 thereof, according to the position of the spindle, as shown in the drawings, the said spring acting in usual manner on the spindle-head to retain the spindle either within the shuttle-body, as in Fig. 1, or elevated, as in Fig. 2. The spindle *b*, having the usual locking-shoulder, *f*, to engage the inside groove, *g*, in the interior of the bobbin *g'*, has the under side of its head notched, as at *e*, to permit the head of the spindle to be readily removed or applied without driving out the pivot-pin, as now necessary in most shuttles.

I have provided the spindle *b* with the auxiliary spindle-section *h*, having a shoulder, *h'*, to engage the inside groove of the bobbin when the spindle is turned from the position Fig. 2 into the position Fig. 1. The end of the spindle-section *h* most remote from the pivot-pin *a* is held loosely in place on the spindle, as herein shown, by an elastic ring or band, h^3, which encompasses the spindle and the end of the said spindle-section, as shown. The other end of the spindle-section is provided with a curved tail-piece, h^2, which is normally kept in contact with the stud 5 by the band h^3.

When the spindle is in the position shown in Fig. 2, the curved tail of the spindle-section is brought into such position with relation to the stud 5 as to permit the elastic loop or band h^3 to throw the spindle-section in close to the spindle, thus removing its shoulder *h'* from the inside groove of the bobbin, when the latter may be readily removed.

Upon turning the spindle about its pivot into the body of the shuttle, as in Fig. 1, the tail-piece h^2, as its curved surface is moved in contact with the stud 5, causes the spindle-section to be moved outward or away from the main body of the spindle, so that the projection or shoulder *h'* enters the inside groove, *g*, of the bobbin *g'*, which has been previously placed on said spindle, thereby retaining the bobbin in place on the spindle, as shown in Fig. 1.

The spindle may be readily removed from the shuttle by removing the spring *a'*, as will be clearly understood.

Heretofore in shuttles employing bobbins formed with inside grooves one of the engaging hooks or projections on the spindle has been made as a spring; but weakening of the said spring for any reason enables the bobbin to escape from the spindle.

I claim—

1. The shuttle-body, spindle *b*, spindle-section *h*, having a tail-piece, and elastic band for

connecting the said spindle and its section, combined with the spindle pivot-pin, and a stud co-operating with the spindle-section to engage it with and disengage it from a bobbin placed on the spindle, substantially as described.

2. The shuttle-body, its pivot-pin, the shouldered spindle *b*, and the independent spindle-section, combined with an elastic band to retain the said spindle-section to the spindle, and with means to move the latter away from the main body of the spindle, substantially as and for the purpose set forth.

3. The shuttle-body, its pivot-pin, the shouldered spindle *b*, and the independent spindle-section having a shoulder, *h'*, combined with an elastic band to retain the said spindle-section to the spindle, and with means to move the latter away from the main body of the spindle, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH CLAUS.

Witnesses:
J. S. LUDLOW,
HENRY A. ROACH.