

139,697

PATENT



SPECIFICATION

*Application Date, May 26, 1919. No. 13,159/19.*

*Complete Left, Nov. 26, 1919.*

*Complete Accepted, Mar. 11, 1920.*

PROVISIONAL SPECIFICATION.

**Improvements in Shuttles for Weaving Looms.**

We, JOHN MATTHEWS, of 18, Booth Street, Old Swan, Liverpool, Engineer, FRANK HORNBY, Manufacturer, and ERNEST BEARSLEY, Works Manager, both of Meccano Limited, Binns Road, Old Swan, Liverpool, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to a shuttle for looms of the type in which the weft may be threaded through the eye of the shuttle without the necessity of sucking the thread through the eye.

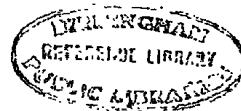
10 According to this invention, the head of the shuttle is cut out to receive a plate which is inserted into the side of the shuttle, this plate having a projecting horn or beak which passes through the side wall of the shuttle and into a recess in the head of the shuttle in front of the cop spindle. The beak or horn is obliquely disposed upwards and inwards, the point lying forward and the root of the beak terminating in a slot in the plate which slot finishes in a circular or other eye. The plate may be secured in any suitable manner to the  
15 side of the shuttle, as by screws or pins, and on the top of the shuttle, and preferably in the wood of the shuttle body, are cut two slots, one slot disposed obliquely away from that side of the shuttle in which the plate carrying the beak is fixed, the other slot being approximately vertical. These two slots are adapted to receive the weft from the cop on the spindle in the  
20 operation of threading the shuttle.

In carrying out this operation the thread from the cop is passed along one slot, turned round the projecting end of the beak and drawn back along the other slot. If the loop of the thread be then pulled tight, the bight of the loop rides down the inclined edge of the beak being led by this tightening  
25 action along the slot in the plate and towards the eye in the plate, the turn of the thread round the lower part of the inclined edge of the beak being then drawn out by pulling or by a rub of the thumb or finger across the face of the plate in the shuttle side, this rub extending the loop and enabling the free end of the thread to be pulled through. The shuttle is thus threaded quite simply.

30 Owing to the construction of the plate carrying the beak no slot is requisite in the wall of the shuttle from the top to the edge, the wall being thus maintained strong and capable of resisting the stress during picking.

The two slots cut in the forward body of the shuttle for the thread, are so disposed that a ligament or strut of the material is left beneath, which acts as  
35 a post round which the thread is held and angled during the operation of its loop sliding down the inclined edge of the beak.

[Price 6d.]



Instead of forming two slots in the front body material itself of the shuttle, a separate element may be inserted into a groove or recess in the shuttle to effect this object, the element being of wood, metal, or other material, and adapted to form at the rear of the beak the two slots previously described, and whether the slots are formed in the body of the material itself of the shuttle 5 or by a separate piece, it is preferred that the material between the slots shall project forward into the recess where is the beak, so that the loop of thread may pass more readily along the inclined edge of the beak. The plate carrying the beak may be made of metal or other suitable material. In order to give facility in engaging the loop of the weft round the point of the beak, the latter 10 may be given an upward turn where it lies in the forward recess of the shuttle. A suitable clearance in the shuttle wall is left round the inclined edge of the beak, and the slot in the plate past which the thread loop rides is made restricted, and the material of the plate forming the eye is curved to form somewhat of a hook in order to prevent unthreading of the shuttle by ballooning or 15 otherwise, after the thread has once entered the eye.

Dated this 24th day of May, 1919.

For the Applicants,

A. J. DAVIES,  
Patent Agent, 20  
37, Moorfields, Liverpool.

#### COMPLETE SPECIFICATION:

#### Improvements in Shuttles for Weaving Looms.

We, JOHN MATTHEWS, of 18, Booth Street, Old Swan, Liverpool, Engineer, FRANK HORNBY, Manufacturer, and ERNEST BEARSLEY, Works Manager, both 25 of Meccano Limited, Binus Road, Old Swan, Liverpool, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to loom shuttles of the hand threading type in which the weft may be threaded through the eye of the shuttle without the necessity 30 of sucking the thread through the eye.

According to this invention, the head of the shuttle is cut out to receive a plate which is inserted into the side of the shuttle, this plate having a projecting horn or beak which passes through the side wall of the shuttle and into a recess in the head of the shuttle in front of the cop spindle. The beak or 35 horn is obliquely disposed upwards and inwards, the point lying forward and the root of the beak terminating in a slot in the plate which slot finishes in a circular or other eye. The plate may be secured in any suitable manner to the side of the shuttle, as by screws or pins, and on the top of the shuttle, and preferably in the wood of the shuttle body, are cut two slots, one slot 40 being inclined towards that side of the shuttle in which the plate carrying the beak is fixed, the other slot being approximately vertical. These two slots are adapted to receive the weft from the cop on the spindle in the operation of threading the shuttle.

Hand threading shuttles in which a loop of the weft thread is passed over 45 an inclined beak-like member which forms a guide to lead the loop to the shuttle eye are already known and it has been proposed to form such a member of wire with the outer end twisted to form the shuttle eye and an eye to receive a screw for attachment purposes, slots being provided in the shuttle to guide the thread to the fitting but the simple plate like fitting according to the 50

present invention is very rigid and positive in action in spite of the severe usage to which the shuttle is subjected.

The invention is illustrated in the accompanying drawings in which Fig. 1 in a plan view of the front or eye end of a shuttle showing the threading device, Fig. 2 being a vertical section on the line A—B Fig. 1, and Fig. 3 an outside elevation corresponding to Fig. 2 showing the eye plate. Fig. 4 is a fragmentary sectional plan on the line C—D Fig. 2 through the forward end of the shuttle. Figs. 5, 6, and 7 are views of the eye plate, Fig. 5 being an elevation, Fig. 6 an end view and Fig. 7 a plan.

In carrying out the invention, the head 1 of the shuttle is cut out or recessed to receive a plate 2 which is inserted as shown in Figs. 1 and 3 in the side wall of the shuttle, this plate having a projecting horn or beak 3 which passes through an aperture 4, Fig. 4, in the side wall of the shuttle and into a recess 5 in the head of the shuttle in front of the cop spindle 6. As shown, the beak 3 is obliquely disposed upwards and inwards, the point lying forward and the root of the beak terminating in a slot 7 in the plate 2 which slot enters the eye 8. The plate may be secured in any suitable manner, as by screws 9, to the side wall of the shuttle, and on the top of the shuttle, and preferably in the wood of the shuttle body, are cut two slots 10, 11, one slot 10 being inclined from the top towards that side of the shuttle in which is fixed the plate 2, the other slot 11 being approximately vertical, the thread is adapted to be passed up and down in these slots and round the end of the beak 3 during the operation of threading the shuttle.

In carrying out this operation of threading, the weft from the cop is passed along the oblique slot 10 in the position *a* Fig. 1, then turned round and under the projecting end of the beak 3, to the position *b* Fig. 1, and then drawn back along the slot 11, to the position *c* Fig. 1. If the end of the loop *c* be then pulled tightly, the bite of the loop rides down the inclined edge *3a* of the beak, as indicated by the dotted lines *d* Fig. 1, being led by this tightening action to the root of the beak and into the slot 7 of the plate, as indicated at *d* Fig. 3. This exposed turn of the thread in the slot 7 may then be drawn out by pulling, or by a rub of the thumb or finger across the face of the plate 2, such rubbing extending the loop and allowing the free end of the thread to be pulled through, the shuttle being thus quite simply threaded.

Owing to the construction of the plate 2 carrying the beak 3 no slot is requisite in the wooden wall of the shuttle from the top to the eye, the wall being thus maintained strong and capable of resisting the stress during picking.

The two slots 10, 11, cut in the forward body of the shuttle for the thread, are so disposed that a ligament or strut 12 of the body material is left beneath, which acts as a post round which the thread is held and angled during the operation of its loop sliding down the inclined edge of the beak.

Instead of forming two slots in the front body material itself of the shuttle, a separate element 13 as shown may be inserted into a groove or recess in the shuttle to effect this object, the element being of wood, metal, or other material, and adapted to form at the rear of the beak the two slots previously described, and whether the slots are formed in the body of the material itself of the shuttle or by a separate piece, it is preferred that the material 14 between the slots shall project forward into the recess where is the beak, so that the loop of thread may pass more readily along the inclined edge of the beak. The plate 2 carrying the beak may be made of metal or other suitable material. In order to give facility in engaging the loop of the weft round the point of the beak, the latter may be given an upward turn where it lies in the forward recess of the shuttle. A suitable clearance 4 in the shuttle wall is left round the inclined edge of the beak, and the slot 7 in the plate past which the thread loop rides is made restricted, and the material of the plate forming the eye is curved to form somewhat of a hook at 15 in order to prevent unthreading of

the shuttle by ballooning or otherwise, after the thread has once entered the eye.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

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1. A loom shuttle of the hand threading type provided with a plate let into the side wall of the shuttle, said plate having a beak integral therewith and being formed with a shuttle eye, the oblique edge of the beak terminating in a restricted slot through which the weft loop passes to the eye, two slots being formed in the shuttle at the rear of the beak to guide the thread on the beak, substantially as described. 10

2. Hand threading loom shuttles constructed and arranged as described and shown in Figs. 1 to 7 inclusive of the accompanying drawings.

Dated this 25th day of November, 1919.

For the Applicants,

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A. J. DAVIES,  
Patent Agent,  
37, Moorfields, Liverpool.

[This Drawing is a reproduction of the Original on a reduced scale.]

