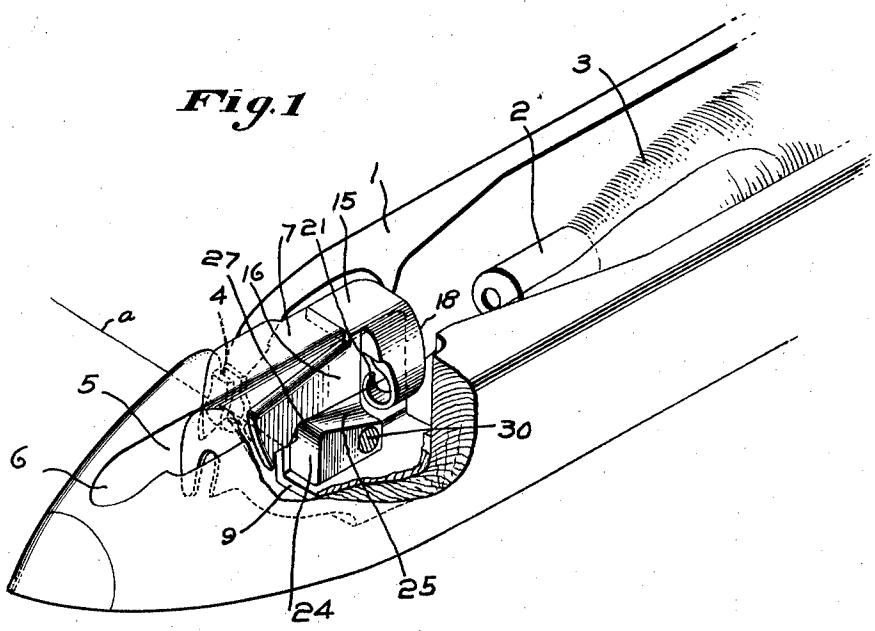
E. S. STIMPSON.

LOOM SHUTTLE.

APPLICATION FILED AUG. 2, 1919.

1,334,683. Patented Mar. 23, 1920.

Fig. 1



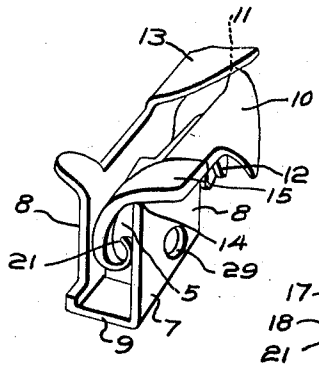


Fig. 2

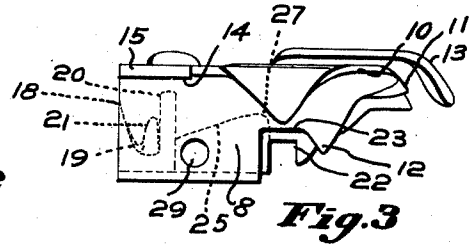
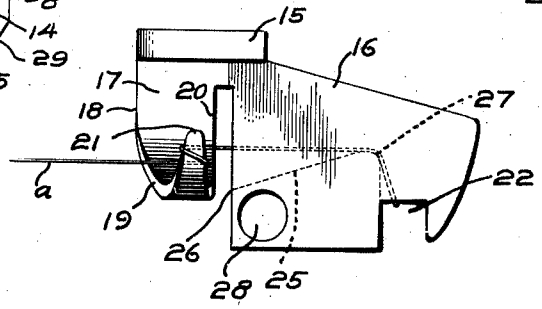


Fig. 3

Fig. 4



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LOOM-SHUTTLE.

1,334,683. Specification of Letters Patent. Patented Mar. 23, 1920.

Application filed August 2, 1919. Serial No. 314,906.

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, a citizen of the United States, resident at Hopedale, in the county of Worcester and 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 characters on the drawings representing like parts.

This invention relates to loom shuttles, and more particularly to the means for controlling the thread at the threading end of the shuttle.

In filling replenishing looms where the bobbin in the shuttle is changed from time to time to maintain a working supply of filling in the shuttle, it is common to provide devices for automatically effecting the threading of the shuttle during the operation of the loom. Owing to the character of the means employed for automatically threading the shuttle while it is in play, danger arises that at times the shuttle is liable to become unthreaded. This may be caused by various conditions, among which may be mentioned the sudden stopping of the shuttle at the end of its pick. At this time a loop of thread is liable to be thrown from the filling carrier or bobbin in the shuttle and to loop around some of the parts, or unthread the shuttle, either condition effecting an undesirable interruption in the operation of the loom. It is also common to provide loom shuttles with tension devices, in order to lay the weft thread or filling properly in the shed as the shuttle is picked, and such devices have operated with more or less satisfactory results.

One of the objects of the present invention is to provide a self threading shuttle, as such shuttles are usually termed, with means for guiding and controlling the thread as it is drawn from the shuttle, and also to facilitate proper threading of the shuttle without interrupting the operation of the loom.

Another object of the present invention is to simplify the devices for controlling the weft thread or filling and to render them effective and reliable in operation.

In carrying out the objects of the present invention, the loom shuttle is provided with a throat block having a scroll eye in the thread passage and a hook under which the thread passes at it leads to the side delivery eye, between the two a tension block being provided for insuring the requisite yet not over tension to the thread as it is drawn from the shuttle.

In the drawings:—

Figure 1 is a perspective view of the threading end of the shuttle, with parts broken away to show constructions beyond;

Fig. 2 is a side elevation showing the throat block in its preferred form;

Fig. 3 is a detached view showing the threading block and the throat block in side elevation;

Fig. 4 is a perspective view showing the threading block and throat block in their assembled relation.

The shuttle 1 contains the filling carrier or bobbin 2 on which the filling or weft thread 3 is wound. At that end of the shuttle adjacent the top end of the filling carrier or bobbin, the shuttle is provided with the slotted side delivery eye 4, and a longitudinally extending thread passage 5. In the present instance of the invention, the longitudinal thread passage is extended toward the tip end of the bobbin as at 6, and rearwardly thereof is provided with a threading block 7. The threading block 7 may be of any usual or desired type, several of such types being now well known in the art, but, in the present instance, the threading block 7 is formed with the side portions 8, 8 fitted within a recess in the end of the shuttle, and connected by a bottom wall 9. One of the walls 8 has the forwardly extending portion 10 formed with an inturned beak 11 and a downturned portion 12 which terminates adjacent the passage to the side delivery eye. The other side wall 8 of the threading block has an overhanging guard 13. These parts thus far described, may be of any usual or desired character.

One of the side walls 8 of the threading block is formed with a recess 14 in which rests the upper ledge or surface 15 of the throat block.

The throat block, shown detached in Fig. 2, is formed with a side wall 16 which lies flat against the inner surface of one of the side walls 8 of the threading block when the throat block is in operative position. The ledge or top portion 15 of the threading block extends sufficiently far outwardly beyond the side wall 8 of the threading block

to direct the thread inwardly and downwardly into the thread passage when the shuttle is picked following replenishment of filling. Below the ledge or portion 15 and extending into the thread passage is the scroll forming portion 17 of the throat block. This portion 17 is formed of a flat plate of substantial width at its upper portion, as indicated in Fig. 2, and with the edge 18 which is adjacent the entrance to the thread passage, extending downwardly at substantially right angles to the longitudinal axis of the shuttle, and then this edge of the scroll forming portion of the throat block is inclined to the longitudinal axis of the shuttle as at 19. The opposite edge 20 of the scroll eye forming portion 17 extends downward into the thread passage, then upward in a curved direction to meet the tapering edge 19 to thereby produce a cast-off tip 21, the construction being such that should the weft thread or filling *a* be looped around the cast-off tip 21 of the scroll eye at any time, the pull upon the weft thread or filling as it is drawn from the shuttle will cause the thread or filling to slide upwardly over the tip or be cast off and remain within the scroll eye.

At the other end portion of the throat block, the side wall 16 is provided with a hook 22 under which the thread leads as it passes to and through the side delivery eye. The hook 22 is formed to project below the recessed portion 23 of the side wall 8 of the threading block, as indicated in Fig. 3, the construction being such that when the shuttle is threaded, and the filling is drawn through the side eye during the flight of the shuttle, it will drag over the surface of the hook 22, which may be made of metal appropriate to withstand the friction, and of rounded character to prevent any sharp edge being presented to the thread or filling. The threading block is therefore, protected, and any wear that occurs, takes place upon the throat block. The side 16 of the throat block has a laterally projecting tension block 24 which substantially fills the lower part of the thread passage 5 in the threading block, and preferably rests upon the lower wall 9 of said block. The tension block 24 has an inclined thread supporting surface 25 which is lower adjacent the scroll eye than it is at the hook end portion of the throat block. The lower end of the inclined surface 25 at 26 is below the center of the thread eye, and the inclination of the surface 25 is such that a shoulder 27 is formed above the hook 22 and also above the center of the scroll eye, the construction being such that the thread when slack will rest upon the inclined surface 25, and when drawn taut will be bent around the shoulder 27 downwardly under the hook 22, thereby producing the desired frictional resistance or drag on the weft thread or filling as it is drawn from the shuttle.

The hook 22 preferably is sufficiently forward of the scroll eye to direct the thread *a* laterally outward through the slotted thread eye 4 without having the thread itself engaged with the threading block.

The straight downwardly extending wall 18 of the scroll eye has a tendency to prevent looping of the thread when the shuttle is suddenly brought to rest at the end of its flight, and the inclined surface 25 of the tension block 24 is to provide the desired tension to the thread either when it is slack or more taut.

For cheapness of manufacture, and as a preferred form of construction of the throat block, it and the various parts thereof may be made integral. An opening 28 is formed in the throat block, and preferably passes through the tension block 24 coincident with the similar opening 29 formed in the side walls 8 of the threading block, the construction being such that a single bolt serves to hold the threading block and throat block in their assembled and operative relation in the shuttle.

What is claimed is:—

1. A self threading shuttle having a slotted side delivery eye, a threading block provided with a longitudinally extending thread passage, a throat block fitting into the thread passage of the threading block and comprising (1) a scroll eye adjacent the entrance to the thread passage, (2) a tension block filling the lower portion of the thread passage in the thread block and having a surface inclined upwardly from a point adjacent the scroll eye and terminating in a shoulder above the horizontal plane passing through the center of the scroll eye, and (3) a hook below the said horizontal plane and under which the thread is led from the shoulder to the side delivery eye.

2. A self threading shuttle having a slotted side delivery eye and a longitudinal thread passage, a throat block secured in the thread passage and comprising (1) a scroll eye formed of a flat plate, the edge of which adjacent the entrance to the thread passage extends downwardly and across the passage at substantially right angles to the longitudinal axis of the shuttle and then is inclined to said axis to give a casting-off taper to the scroll, (2) a hook at the exit portion of the thread passage, and (3) a tension block having a thread supporting surface extending upwardly from the scroll to a point above the hook.

3. A self threading loom shuttle having a slotted side delivery eye and a longitudinally extending thread passage, a throat block secured in the thread passage and comprising (1) a scroll eye adjacent to the entrance of the thread passage, (2) a hook ad-

jacent the other or exit end of the thread passage, (3) a plate connecting the scroll and hook, and (4) a tension block between the scroll eye and hook having an upwardly inclined thread supporting surface terminating in a shoulder above the hook over which the thread is bent downwardly under the hook on its way to the side delivery eye.

4. A self threading loom shuttle having a slotted side delivery eye and a longitudinally extending thread passage, a throat block secured in the thread passage and consisting of (1) a scroll eye adjacent the entrance to the thread passage, (2) a hook adjacent the side exit of the thread passage, and (3) a tension block having a thread supporting surface inclined upwardly from a point adjacent the scroll eye to a point above the hook.

5. A self threading loom shuttle having a slotted side delivery eye and a longitudinally extending thread passage, a throat block secured in the thread passage and consisting of (1) a scroll eye adjacent the entrance to the thread passage, (2) a hook adjacent the side exit of the thread passage, and (3) a tension block having a thread supporting shoulder above the hook and over which the thread is bent as it passes from the scroll eye under the hook to the side delivery eye.

6. A throat block for self threading shuttles consisting of (1) a side wall, (2) a scroll eye formed of a flat portion leading from the top of the side wall and tapering gradually to a cast-off tip, (3) a hook formed in the side wall remote from the scroll, and (4) a tension block projecting from the side wall and having a thread supporting surface leading from a point below the center of the scroll eye to a point above the center adjacent the hook.

In testimony whereof, I have signed my name to this specification.

EDWARD S. STIMPSON.