

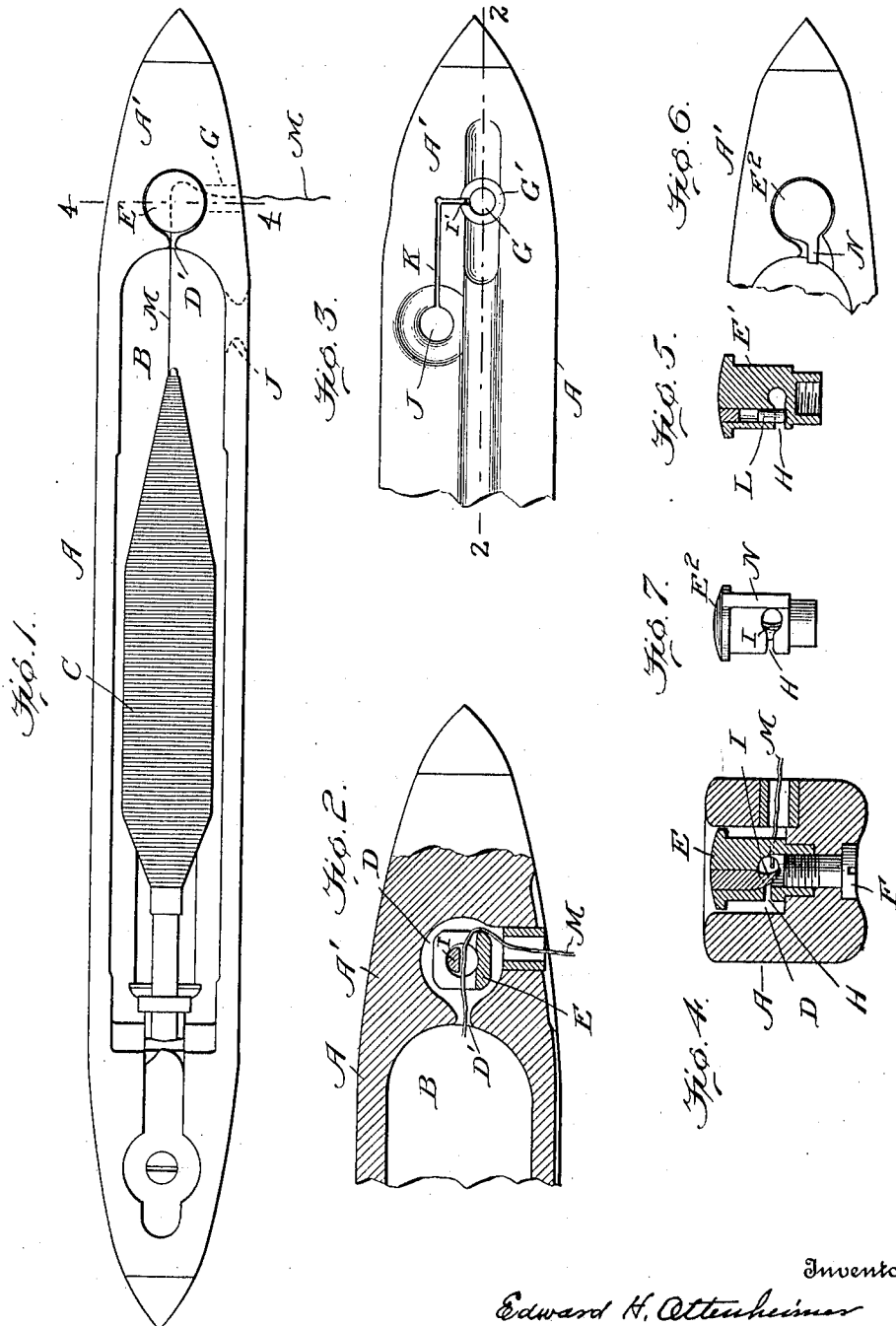
E. H. OTTENHEIMER & E. C. AUTHIER.

WEAVING SHUTTLE.

APPLICATION FILED JUNE 21, 1911.

1,039,435.

Patented Sept. 24, 1912.



Witnesses

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WEAVING-SHUTTLE.

1,039,435.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed June 21, 1911. Serial No. 634,582.

To all whom it may concern:

Be it known that we, EDWARD H. OTTENHEIMER and EDWARD C. AUTHIER, citizens of the United States, residing at Willimantic, in the county of Windham and State of Connecticut, have invented certain new and useful Improvements in Weaving-Shuttles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to weaving shuttles adapted to be threaded quickly by the use of the hands, only.

In using common shuttles the thread placed in the shuttle has its free end portion carried nearly to the shuttle's end and then passed outward laterally through a small aperture or eyelet. The quickest and most convenient way of causing the thread to pass out through the aperture is by bringing the shuttle to the mouth of the operator in such manner that the aperture is surrounded by the lips and then by suction causing an outward current of air, through the aperture, whereby the end of the thread is brought outside the shuttle. It being difficult to thread a shuttle in any other manner, this is the usual way. But as the same shuttle is commonly used by many individuals, from time to time, this method is objectionable for sanitary reasons, especially since no large factory is ordinarily free from diseases which may be transmitted by such practices.

The primary object of the invention is to eliminate this evil by providing shuttles such that there is little or no temptation to save time or trouble by carrying the shuttle to the mouth in threading.

The desired end is attained by providing a shuttle of common approved general form having the usual lateral aperture, with a larger lateral aperture passing through the thin wall of the central portion of the shuttle, and connected to the smaller aperture by a narrow slot, and with a central stud sunk in the body of the shuttle opposite the smaller or service aperture. A bight of the thread is passed over the stud and the end portion of the thread is passed out through the larger aperture and drawn through the slot into the service aperture.

In the drawings, Figure 1 is a top plan view of our shuttle. Fig. 2 is a like view of the right hand end of the same structure, a portion above the line 2—2, Fig. 3, being re-

moved. Fig. 3 is a side view of the right hand portion of the shuttle seen in Fig. 1. Fig. 4 is a section on the line 4—4, Fig. 1. Fig. 5 is an axial section of a modified form of the stud seen in Figs. 1, 2 and 4. Figs. 60 6 and 7 show in plan and elevation a further modification of the stud of Figs. 1, 2, 4.

In these figures, A represents the body of a shuttle having the usual recess B to receive the bobbin C. In the solid end portion A' 65 of the shuttle a recess D is formed to receive a heavy stud E having a head slightly smaller than the recess, and this stud is rigidly but removably fixed in place by means of a screw F passed upward through the lower portion of the shuttle and engaging the stud's lower end, the heads of both stud and screw being sunk slightly within the planes of the surrounding surfaces. The recess D communicates on one side, by a 70 channel D' with the recess B. From the lower portion of the recess containing the stud a passage G leads laterally outward, in the usual way, and is preferably provided with a bushing G', and in the horizontal 75 plane of this passage and upon the side opposite the passage the stud is cut away to form a slot H extending inward to a suitable distance, so that the thread may enter the stud. An inwardly curved guard I pro- 80 jects downward across this slot to a point a little below the general plane of the lower wall of the latter, and the body of the stud is cut away to form a cavity into which the free lower end of the guard projects. The 85 bushing G' is preferably provided with a guard I' similar to I. Through the wall of the recess B, near the end containing the recess D, a larger opening J is formed and this opening is connected with the aperture 90 G by a narrow slot K extending through the wall to the recesses B, D and the channel D'. To thread the shuttle, thread M is drawn from the bobbin and formed into a 95 bight or loop which is passed over the stud, and the free end of the thread is passed out through the large opening J. The projecting thread being then grasped by the fingers and carried toward the end of the shuttle, 100 is carried through or along the slot K and into the aperture G. A gentle pull upon the thread, during or subsequent to this operation, causes it to slip downwardly along the rearwardly curved guard, to pass its free 105 end, and then to rise above the plane of that 110

end. From this position it cannot escape since the form of the rear side of the guard is such that a pull upon the thread now tends to keep it above the lower end of the guard, and at the same time the depression into which the guard extends is not wide enough to permit serious sagging of the thread at this point even if slack should be formed. It follows that the thread is practically as secure as when threaded through the corresponding aperture of a common shuttle. As the opening J is large and usually near the upper side of the shuttle, the thread is readily and instantly passed through it, and the whole operation of threading requires but a moment. The exact construction thus far described need not be followed.

Fig. 5 shows in axial section a modified stud E' wherein the guard is a loose pin L which normally obstructs the stud slot and has a rounded lower end, so that the thread drawn against the outer side of the stud lifts it, while it has no such effect when thrown against the inner side. Usually gravity alone suffices to hold the pin at its lowest point except when the thread is drawn against it.

When ordinary shuttles having a wide thread passage are to be provided with these devices, a stud E² having a wing N, Figs. 6 and 7, is used to reduce the passage to a width preventing whipping movement of the thread and possible disengagement. Many other changes may be made while keeping within our invention.

What we claim is:

1. The combination with a shuttle having, in the delivery end portion, a central recess communicating by an open channel with the bobbin chamber, a service aperture leading out from said recess, a threading aperture

leading out from said chamber, and a narrow slot leading outward from said chamber and recess and connecting the two apertures, of a headed stud seated centrally in said recess and provided with a transverse slot upon the side opposite the service aperture, and a projection from one wall of the stud's slot extending across the slot into the central portion of a larger cavity in the opposite wall.

2. The combination with a shuttle having in the upper side of its delivery-end portion a deep recess communicating with the bobbin chamber through an open passage, a lateral delivery aperture leading out from said recess, a lateral threading aperture leading out from said chamber, and a lateral slot connecting the apertures from end to end, of a stud smaller than the recess, located centrally therein and provided upon the side opposite the delivery aperture with a lateral slot, an externally rounded member extending from one wall of the stud slot and entering slightly within the central portion of a larger recess in the opposite wall of the slot.

3. The combination with a shuttle, of a headed stud seated in a recess in the upper side of the delivery-end portion thereof and having its lower end hollow and transversely slotted upon one side, and a small externally rounded finger projecting from above into the central portion of the cavity below the plane of the transverse slot.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD H. OTTENHEIMER.
EDWARD C. AUTHIER.

Witnesses:

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