

G. MATHIEU.
SHUTTLE.

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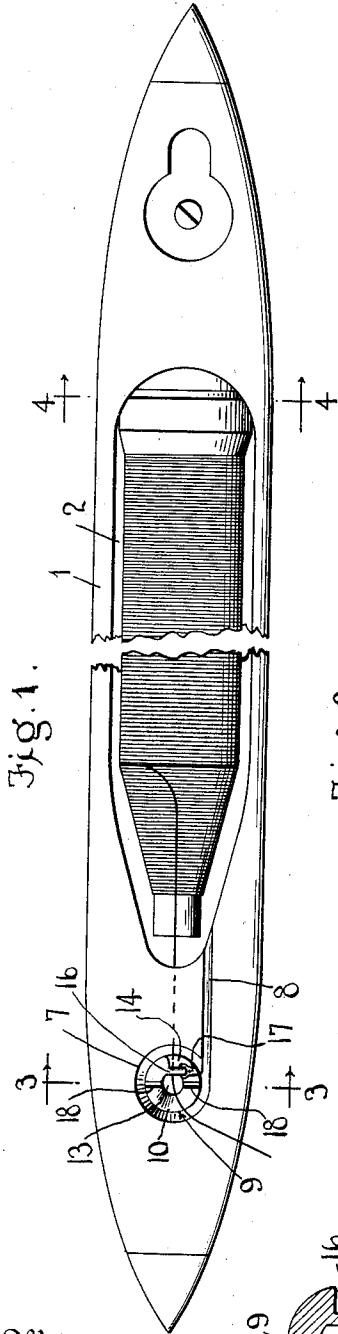


Fig. 1.

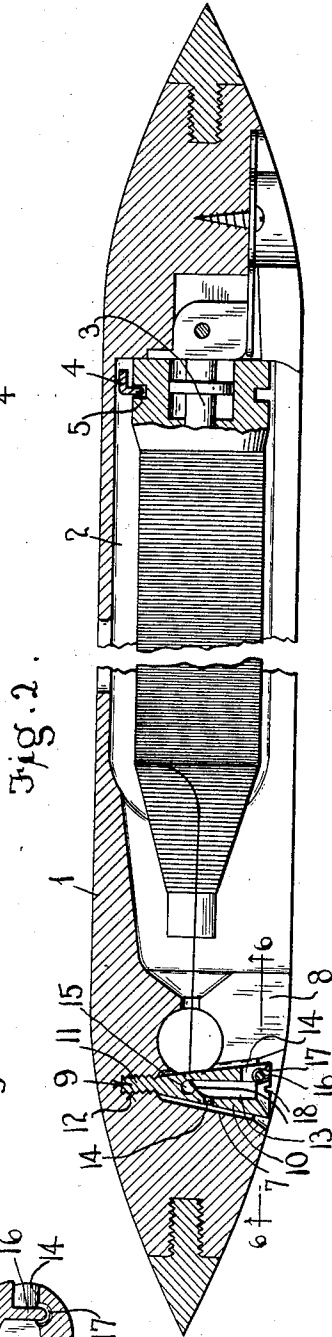


Fig. 2.

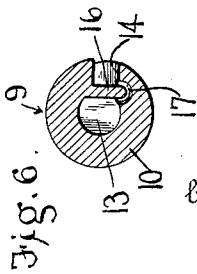


Fig. 6.

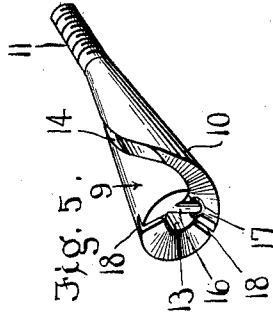


Fig. 5.

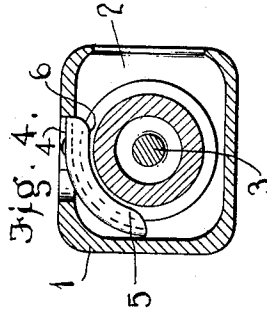


Fig. 4.

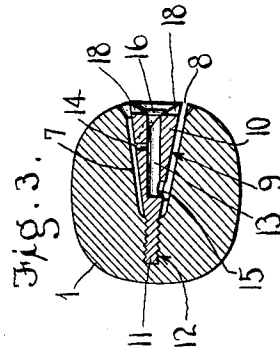


Fig. 3.

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SHUTTLE.

1,058,614.

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To all whom it may concern:

Be it known that I, GEORGE MATHIEU, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Shuttles; and I do 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.

This invention relates to improvements in shuttles.

One object of the invention is to provide a shuttle having an improved construction and arrangement of eye or thread guiding mechanism whereby the thread from the bobbin is quickly and easily engaged therewith, thus obviating the usual unsanitary method of sucking the thread through the eye of the shuttle.

An important object of the invention is in the provision of a tapering spirally formed removable eye, around which the thread passes from the shuttle, whereby the desired friction is given to the thread as it passes from the shuttle and the thread prevented from passing from the eye.

With this and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of the shuttle showing my invention applied thereto; Fig. 2 is a central horizontal section thereof; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a similar view on the line 4—4 of Fig. 1; Fig. 5 is a detail perspective view of the thread guiding eye removed from the shuttle; Fig. 6 is a cross sectional view through the end of the eye taken on a plane indicated by the dotted line 6—6 of Fig. 2.

Referring more particularly to the drawings 1 denotes the shuttle to which my improved thread guiding eye is applied and which is substantially of the same construction as of the ordinary shuttle except that the opening 2 through which the bobbin is applied is arranged in the side instead of in the top of the shuttle as in the ordinary construction. Hinged in the usual or in any suitable manner at one end of the shuttle is the usual bobbin supporting pin

3 and in the upper side of this end of the shuttle is arranged the bobbin retaining spring 4, which is of the usual construction, except that the bobbin engaging flange 5 on the end thereof is cut away at one end as shown at 6 to permit the bobbin to be engaged therewith through the opening in the side of the shuttle as is clearly shown in Fig. 4 of the drawings.

In the opposite end of the shuttle is a transverse horizontally disposed eye receiving socket, 7 which communicates with the adjacent end of the bobbin receiving opening of the shuttle by a longitudinally disposed slit or passage 8. In the socket 7 is arranged my improved thread guiding eye 9. Said eye comprises a tapered head 10 on the inner end of which is a screw or thread shank 11 which is adapted to be screwed into a thread passage 12 at the inner end of the socket 7 in the shuttle, and shank 11 when thus screwed into the threaded passage 12 will position the head 10 of the eye in the socket 7 as clearly shown in Figs. 2 and 3 of the drawings.

The larger or head end of the eye has formed therein a centrally disposed bore 13 and in the side of the head is formed a spiral slot 14 which communicates or is cut through to the bore 13 and which terminates at its inner end in a circular passage 15 extending transversely through the inner end of the head, said passage also communicating with the bore 13 as shown. The outer end of the spiral slot 14 opens through the outer end of the head and, across the outer end of the slot is arranged a thread guiding and retaining pin or lug 16 which is preferably formed integral with the outer end of the head adjacent to one side of the end of the slot 14 as shown. The free end of the pin or lug 16 is round or beveled and projects into a slight depression or recess 17 formed in the adjacent portion of the head at the upper end of the side of the slot 14, said beveled or rounded end of the pin or lug 16 terminating a very slight distance from the bottom of the recess 17, sufficient to permit the passage of the thread from the bobbin when engaged therewith. In the outer end of the head 10 of the eye is a slight depression or annular recess and in the edges of said end are formed notches 18 adapted to receive a screw driver, whereby, the eye may be readily screwed into and

out of engagement with the socket in the end of the shuttle.

In threading my improved eye it is simply necessary to draw the thread off from the end of the bobbin through the slit or passage 8 and to pass the thread around the outer portion of the head of the eye until said end of the thread engages the spiral slot in the head whereupon said slot will guide the thread in between the end of the pin or lug 16 and the recess 17 and into the bore of the eye which completes the threading operation. The outer end of the socket 7 in the shuttle is hollowed out to a slight extent around the head of the eye to facilitate the engagement of the thread with said head.

By means of an eye constructed in accordance with my invention it will be seen that the thread from the bobbin may be quickly and easily engaged with the eye without sucking or employing any separate mechanical means for guiding or pushing the thread through the eye.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

1. The combination with a shuttle having a bobbin chamber with an opening in one side wall thereof and a tapered socket extending transversely and intersecting the plane of the bobbin chamber and opening through said side wall, said shuttle having a passage connecting said chamber and socket, of a tapered thread-guiding eye for insertion in said socket, said eye having a central bore opening through one end, one wall of said bore being provided with a spiral slot communicating with said bore and terminating at its inner end in a transverse passage arranged to register with the shuttle passage connecting the bobbin chamber and eye socket and a thread-retaining member at the outer end of said slot.

2. The combination with a shuttle having a bobbin chamber with an opening in one side wall thereof and a tapered socket extending transversely and intersecting the plane of the bobbin chamber and opening through said side wall, said shuttle having a passage connecting said chamber and socket, of a tapered thread-guiding eye for insertion in said socket, said eye having a central bore opening through one end, one wall of said bore being provided with a spiral slot communicating with said bore and terminating at its inner end in a transverse passage arranged to register with the shuttle passage connecting the bobbin chamber and eye socket and a thread-retaining member at the outer end of said slot, said socket being larger than said eye and having a centrally disposed screw-threaded extension at its inner end and a flared mouth at its outer end, said eye having a screw-threaded shank at its small end for engagement with said threaded socket extension, and means at its larger end for screwing said eye into said socket extension.

3. The combination with a shuttle having a bobbin chamber with an opening in one of the walls thereof and a tapering socket extending transversely and intersecting said chamber, an eye having a screw threaded extension whereby the same is adjustably and detachably secured to the shuttle, said eye being conical from the screw threaded portion with its enlarged end adjacent to the side wall of the shuttle when the same is properly positioned, the socket formed in the shuttle being tapering and larger than the tapering portion of the eye whereby a space is formed around the enlarged tapered portion of the eye, said eye having a central longitudinal bore and a spiral slot communicating therewith and extending along the length of the enlarged end of the same whereby the thread passing from the shuttle is properly guided and held for the purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE MATHIEU.

Witnesses:

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JAMES F. O'BRIEN.