

P. COMEAU.
SHUTTLE.

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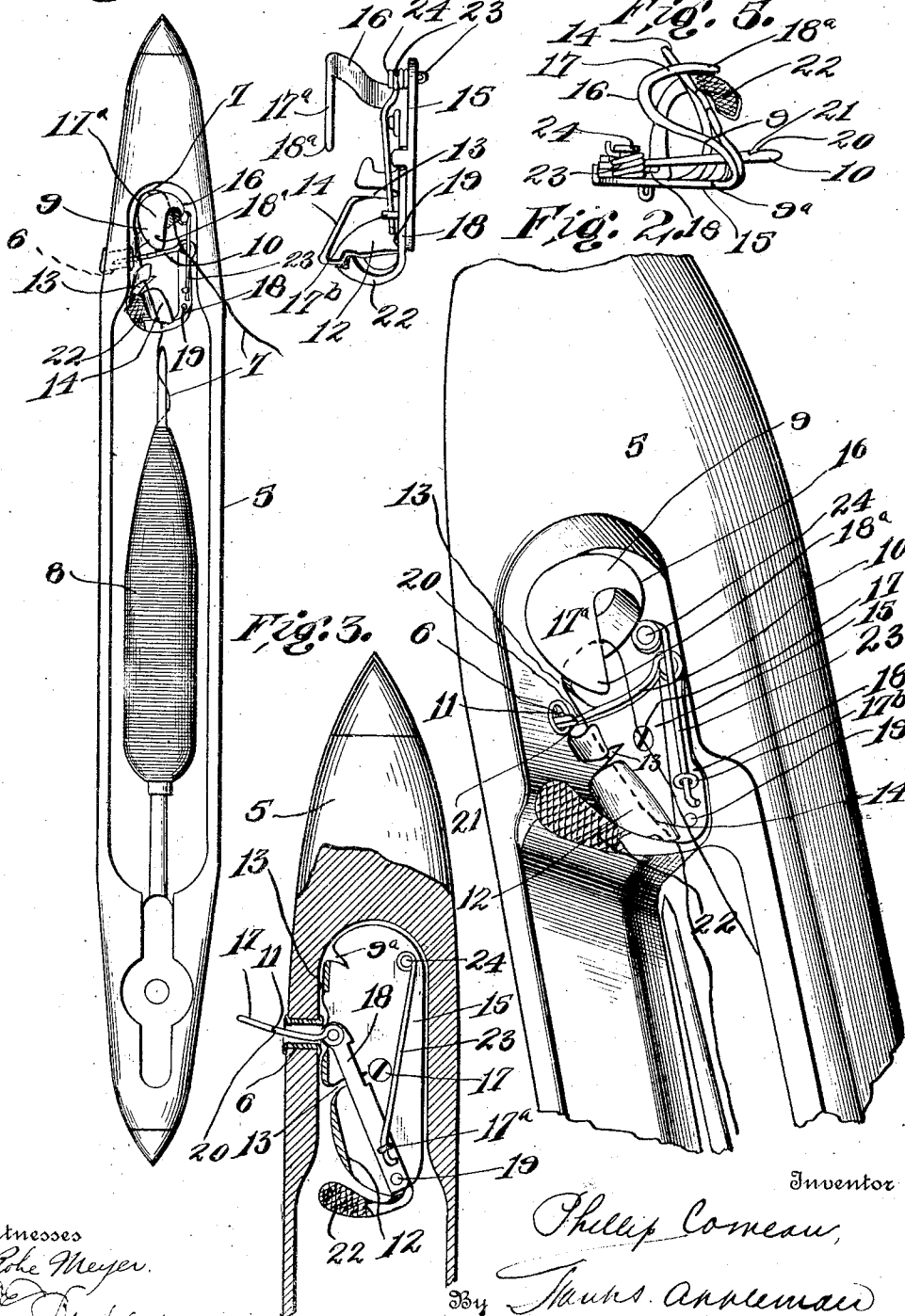
Fig. 1.

Fig. 4.

Fig. 5.

Fig. 2.

Fig. 3.



Witnesses
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SHUTTLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PHILLIP COMEAU, a citizen of the United States, and residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

This invention relates to shuttles and particularly to mechanically operating means for threading a shuttle.

An object of the invention is to produce means, manually or otherwise actuated, for delivering thread to an eye of a shuttle or into such relation to the eye, that it may be pulled therethrough.

A further object of the invention is to provide a thread moving member adapted to extend into the eye of a shuttle for carrying the thread; and it is also an object of the invention to provide novel means for causing the thread moving member to travel in the eye.

With the foregoing and other objects in view, the invention consists in the details of construction and the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawing forming part of the specification, wherein like characters of reference indicate similar parts in the several views and in which—

Figure 1 is a view in elevation of a shuttle containing a mechanism embodying in physical form one type of the invention. Fig. 2 is a perspective view of a fragment of a shuttle illustrating on an enlarged scale an embodiment of the invention. Fig. 3 is a broken sectional view of a fragment of a shuttle and elements of the invention which are also partly in section. Fig. 4 is a view in elevation showing an embodiment of the invention detached from the shuttle. Fig. 5 is an end view thereof.

In these drawings 5 denotes a shuttle, which may be of any type; the same having an eye 6 for the passage therethrough of the thread 7, shown as coming off the spindle 8.

The shuttle may contain means for guiding a thread to a thread moving member and to the end may consist in a guide 9, secured, in operative relation, to the thread moving member, and the thread mov-

ing member may take the form of a needle 10, having a shoulder 11 to which the thread is directed by the guide 9. The illustrated embodiment of the invention, also has a guide 12, with a slot or recess 13, to receive the thread. The upper edge 14, of the guide 12 extends diagonally with relation to a line transversely of the shuttle, and it is inclined slightly toward the eye of the shuttle; the inclined diagonally extending edge being provided to facilitate the entry of the thread into the recess 13, since the thread will ride down the inclined edge and enter the recess.

The guide 9, in the illustrated embodiment of the invention, is of peculiar shape and terminates at its lower end below the eye of the shuttle and is anchored to the shuttle by being carried by the plate 15 attached to the shuttle, by the screw 17. The lower end of the guide is reduced in width and its edge tapers and merges with a notched portion 9^a of the plate and acts to direct the thread downwardly and into position to be engaged by the thread moving member. The guide 9 is also shown as extending upwardly and diagonally across the shuttle, its edge 16 being adapted to be engaged by the thread, and the outer end of said guide terminates in a tapered head 17^a, with its nose 18^a extending toward the spindle; in order that in an attempt to pull thread from the spindle and insert it around the guard 9, the head will serve to direct the thread to the proper position.

The thread moving member is, as has been stated, illustrated herein as a needle 10 attached to a lever 18, which lever is mounted on a pivot 19, and the needle is in such position with relation to the eye that it is moved therein when the lever is operated. The exact construction of the needle may be varied but is shown as having a notch forming a shoulder 21 for engaging the thread and carrying it through the eye as the needle is moved in said eye. The end of the lever remote from the needle has a thumb key 22 thereon and said end is bent in order that its surface will contact with the guide 12 and aid in directing the thread to the notch or recess 13 in the guide. A spring 23 is secured to a post 24 and engages an eye 17^b of the lever for holding the thumb key on the guide 12.

In operation, a thread is pulled from the spindle and the thumb key is manipulated to swing the lever on its pivot thereby carry-

ing the said thumb key away from the guide which it engages. After the thread has been inserted under the thumb key the thumb key is released and the thread is thereby carried so that it will lie between the thumb key and the guard which it engages. The thread is then passed around the guide 9 by inserting the said thread over the head of the guide between the edge of the head and side of the shuttle containing the eye. After looping the thread around the guide 9 a pull exerted on the said thread results in the looped portion thereof riding down the inclined surface of the edge of the guide 9 to the lower end of the guide and in position to be engaged by the shoulder or the eye of the needle, it being understood that during the movement of the thread down the inclined surface of the guide 9, it has also traveled down the inclined surface of the guide 12 and into the notch or recess 9^a in the plate to insure the entrance of the thread into the eye or notch or recess of the needle. When the thread has been caused to travel into such relation to the needle that it may be engaged and moved thereby, the needle is actuated. By pressure on the thumb key, the lever is swung on its pivot and the needle is caused to project into and through the eye, carrying the thread therewith, so that the thread may be grasped and pulled through the eye and the needle may be allowed to return to its normal position under the tension or pressure of the spring on releasing the thumb key.

In further explanation of the operation of the invention, an inspection of Fig. 1 will show the looped portion of the thread embracing the rear edge of the guide 9, and the thread is shown as being without tension. If a pull is exerted on the free end of the thread, the loop will be caused to engage the rear edge of the guide 9, and owing to the inclination, the said thread will travel down the said inclined surface toward the

eye in the shuttle and the thread will eventually descend so far as to pass into the notched portion 9^a of the plate thus causing the thread to descend into the recess 13 in order that said thread may enter the recess of the needle and be engaged by the shoulder thereof when the lever is manipulated for the purpose of actuating the said lever.

I claim—

1. In a shuttle threading device, a shuttle having an eye, a plate secured to the shuttle, a thread engaging member adapted to deliver thread to the eye, a lever for actuating said thread engaging member, a guide having an inclined upper edge provided with a recess, a thumb key for the lever coacting with the guide to confine the thread between the thumb key and the guide, and a guide on the plate having an inclined edge around which the thread is looped and down which it is adapted to travel when pull is exerted on the thread whereby thread is delivered to the thread engaging member in position to be delivered to the eye of the shuttle.

2. In a shuttle threading device, a shuttle having an eye, a plate secured to the shuttle, a thread engaging member adapted to deliver thread to the eye, a lever for actuating said thread engaging member, a guide having an inclined upper edge provided with a recess, a thumb key for the lever coacting with the guide to confine the thread between the thumb key and the guide, and a guide on the plate having an inclined edge around which the thread is looped and down which it is adapted to travel when pull is exerted on the thread whereby thread is delivered to the eye of the shuttle, and means for actuating the lever in one direction.

In testimony whereof, I affix my signature in the presence of two witnesses.

PHILLIP COMEAU.

Witnesses:

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