

F. E. MELLON.
 QUILL FOR NARROW WARE SHUTTLES.
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933,319.

Patented Sept. 7, 1909.

Fig. 1.

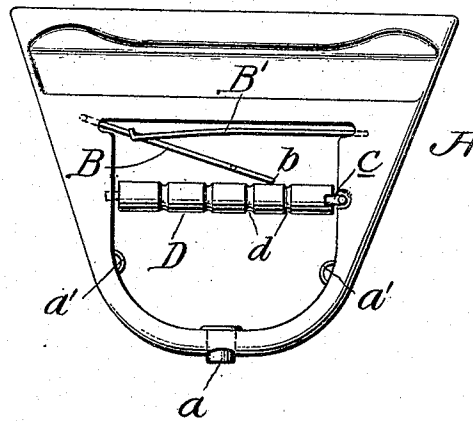
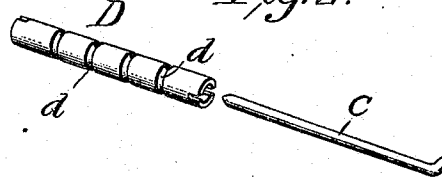


Fig. 2.



Witnesses

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QUILL FOR NARROW-WARE SHUTTLES.

933,319.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK E. MELLON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Quills for Narrow-Ware Shuttles, of which the following is a specification.

The invention to be hereinafter described relates to quills for narrow-ware shuttles, and, more particularly, to such quills wherein the head flanges are dispensed with.

Quills for narrow-ware shuttles must of necessity be small and light, owing to the conditions of use, and yet they should be able to carry a maximum amount of yarn without the coils thereof becoming disarranged in the normal workings of the loom due to the sudden starting and stopping of the shuttles. As heretofore formed, these quills have been made of wood to secure lightness; and to prevent the coils of yarn stripping or sliding endwise, these quills have been provided with heads, which usually served also as a bearing for the tension means to prevent too easy rotation of the quill. These end heads were objectionable as adding weight to the quill and affording a lodgment between them and the body of the yarn, wherein a convolution of thread or yarn would slip and catch, ultimately resulting in broken yarn. Attempts were made to overcome these defects, and the heads were removed from the cylindrical wooden barrel, the convolutions of the yarn or thread being given a quick traverse back and forth during winding so that they would support each other, as well understood in the art. The heads being omitted, the tension means had now to bear upon the body of the yarn or thread wound on the wooden quill and, when the yarn was nearly exhausted, the tension means would act directly on the wooden quill itself, eventually making its wooden surface rough to such an extent as to seriously interfere with proper unwinding of the yarn or thread. Moreover, the headless wooden quill would wear in its bearing and eventually split, catch the yarn or thread and cause damage, especially to the finer silk threads employed, and such thread would slide or slip endwise of the wooden quill, catch in splintered parts of its surface and cause further damage.

With the above practical facts in view, the object of the present invention is to provide a metallic headless quill which, by reason of its structure, can be formed of a thin, seamless, drawn tube, and providing the cylindrical surface of the quill with circular grooves or recesses between which the tension device may bear as the yarn reaches exhaustion, as will more fully appear.

The invention consists of the parts and combinations hereinafter described and then definitely pointed out in the claim.

In the drawings:—Figure 1 is a plan view of any usual or desired form of narrow-ware shuttle. Fig. 2 is a detached view of the quill and its supporting spindle.

The shuttle A may be provided with the usual guide-eye *a* and the usual tension-eyes *a' a'*. Secured to the body of the shuttle A is the tension-arm B, the end *b* whereof is adapted to bear upon the yarn which is wound upon the quill, to be hereinafter described, and, when the yarn has reached depletion, to bear upon the cylindrical surface of the quill, as will more fully appear. This tension-arm B is acted upon by a tension-spring B', as usual. The shuttle body A is likewise provided with a bearing at each side for the quill spindle C, shown detached in Fig. 2.

The quill D, shown as supported by its spindle, in the shuttle in Fig. 1, and detached in Fig. 2, is formed of seamless, drawn, metallic tubing, substantially the same in diameter throughout, except that at intervals the cylindrical surface of the quill is provided with circular grooves or depressions *d*. These circular grooves or depressions *d* are preferably disposed, as shown in Fig. 1, with such relation that the end *b* of the tension-arm B will bear upon the cylindrical surface of the quill between two of said grooves when the yarn on the quill has reached substantial exhaustion.

Owing to the metallic character of the quill D, its surface is not materially injured by the winding and unwinding of the yarn thereon and therefrom, nor is it injured, as in the case of the wooden quill, by the pressure of the tension-arm B thereon when the yarn reaches substantial exhaustion. By providing the metallic quill with circular grooves or depressions *d*, the yarn is held evenly on the quill without being displaced

as the shuttle is suddenly started and stopped.

Rotation in the ordinary soft wooden quill rapidly would cause the interior bearing thereof to become worn and the quill correspondingly unsteadily supported, in fact, the quill will often split, whereas, by the use of the seamless, metallic tube character of the quill D, this is obviated. Likewise, all substantial wear or injurious scoring of the surface of the metallic quill, either by the yarn, as drawn therefrom, or by the tension-arm bearing thereon, is avoided and the quill preserves its uniform character for an indefinite time. The advantages of the seamless, drawn, tubular quill D and its circular grooves *d* will be apparent to one skilled in the art.

What I claim and desire to secure by Letters Patent is:

A yarn or thread-carrier for narrow-ware loom shuttles, comprising a seamless, drawn, metallic, headless, tubular quill open at both ends and of uniform internal diameter throughout its length, said quill being provided with circular grooves disposed at regular intervals at different portions of its length, the external surface of the quill between said grooves being cylindrical and of uniform diameter, substantially as described.

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

FRANK E. MELLON.

Witnesses:

JOHN THIEL,
A. KING DICKSON.