A. L. HANSEN.

TATTING SHUTTLE.

APPLICATION FILED MAY 17, 1915.

1,215,525. Patented Feb. 13, 1917.

Fig. 1

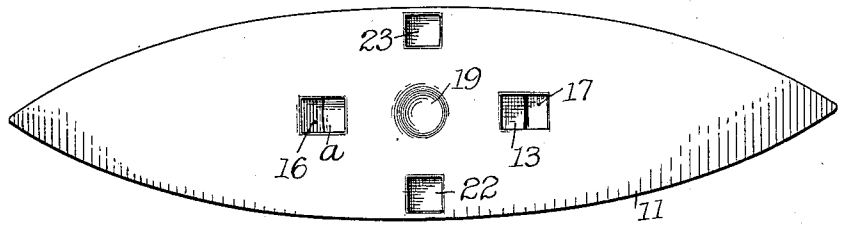


Fig. 2

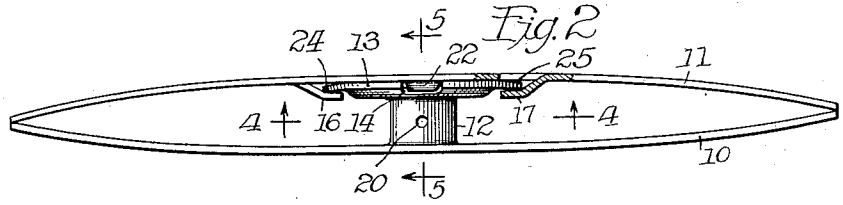


Fig. 3

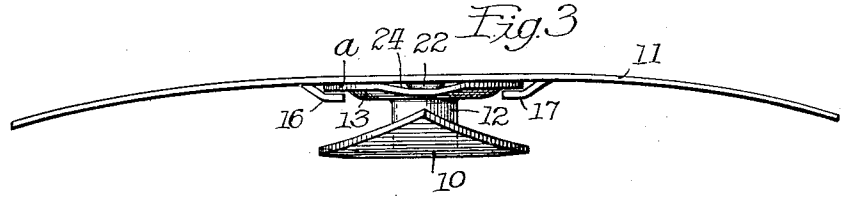


Fig. 4

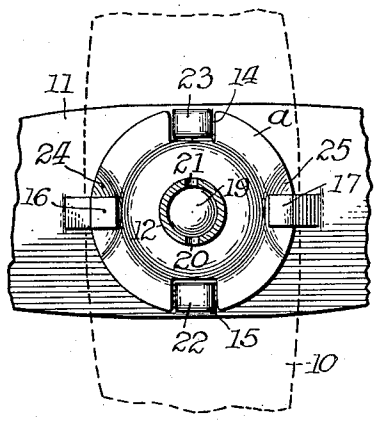
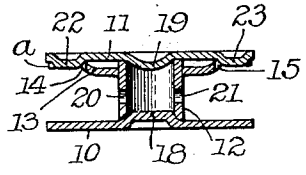


Fig. 5



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TATTING-SHUTTLE.

1,215,525. Specification of Letters Patent. Patented Feb. 13, 1917.

Application filed May 17, 1915. Serial No. 28,535.

To all whom it may concern:

Be it known that I, AUGIE L. HANSEN, a citizen of the United States, and a resident of Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tatting-Shuttles, of which the following is a specification.

My invention relates to shuttles, particularly to tatting shuttles.

The tatting shuttles heretofore used comprise usually two plates of spring material with a bobbin structure between them for receiving thread, the plates being usually fixed with reference to each other and relatively immovable except slight bending thereof in order to pass the thread through the ends thereof when the bobbin is to be refilled. Refilling of the bobbins in these earlier structures was therefore a slow, tedious and trying process.

The general object of my invention is therefore to produce a shuttle which entirely overcomes the failings of earlier shuttles and which can be quickly and readily refilled in a very short time. More in detail, among the important objects of the invention are to construct the shuttle of two separable parts, each including one of the shuttle plates, and to provide improved and simple structure and arrangement for locking the halves together in parallelism.

The various features of the invention are clearly shown on the accompanying drawing, in which—

Figure 1 is a plan view,

Fig. 2 is a side view,

Fig. 3 is a side view with the plates at angles with each other and ready for interlocking engagement,

Fig. 4 is a sectional view on plane 4—4, Fig. 2, and

Fig. 5 is a sectional view on plane 5—5, Fig. 2.

The shuttle comprises two similar elliptical plates 10 and 11 which are bowed longitudinally as shown. At the center of the plate 10 is secured a bobbin hub 12 which has at its outer end the flange 13, the hub serving to receive thread which is held in place thereon between the flange and the plate 10. As shown, the flange has diagonally opposite slots or notches 14 and 15 cut radially inwardly from the edge thereof while the plate 11 has tongues 16 and 17 adapted to register with and to pass through the notches when the plates are brought together at an angle with each other. As indicated in Figs. 3 and 4, the notches are in line with the transverse axis of the plate 10 and the tongues are in line with the longitudinal axis of the plate 11 so that when the plates are brought together at an angle of 90 degrees from each other the tongues will register with the notches and can be passed through the notches to then engage underneath the flange when the plates are relatively rotated in order to lock the plates against separation. The hub 12 is preferably tubular and the plate 10 has the central circular deflection 18 for receiving the inner end of the hub to hold it securely in place. In order to form a pivot for the plate 11 on the flange the plate has the central circular deflection 19 for extending into the outer end of the hub to center and guide the plate 11 during turning. Thus when the plates are applied to each other at right angles with the tongues and notches in register the plates are readily relatively rotated into parallelism or closed position, and can be readily opened to right angle position and separated from each other in order that the bobbin can then be readily wound, the hub having preferably the opposite openings 20 and 21 for anchoring the end of the thread. In order that the tongues will not interfere with proper unwinding of the thread from the bobbin, the peripheral section *a* of the flange is deflected outwardly a distance equal to or greater than the thickness of the tongues.

In order to force the tongues into frictional engagement with the inner side of the flange, projections 22 and 23 are shown provided on the plate 11, and to prevent these projections from interfering with the ready passage of the tongues through the grooves when the plates are first applied to each other, depressions 24 and 25 are provided in the flange section *a*, these depressions being spaced with reference to the notches to receive the projections when the tongues are in register with the notches, the tongues being then readily slipped through the notches ready to engage under the flange when the plates are turned. Upon such turning the projections will ride out of the depressions to the higher portion of the flange and will then tend to force the plate 11 away from the flange to cause frictional engagement of the tongues against the under side thereof,

the combined friction of the tongues and projections on the flange then holding the plates steady and centered during rotation thereof. As soon as the plates reach parallelism the projections will spring into the notches, but at the same time the tongues will pass under the depressed areas 24 and 25 and will still be held frictionally against the flange and will hold the plate 11 against the flange and the projections in the notches. The plates will then be locked in their parallel or closed position during use of the shuttle. The plates are of sheet metal which is more or less springy, and this together with the fact that the sides of the projections are rounded as indicated in Figs. 2 and 3, allows the projections to be raised out of the notches against the pressure of the tongues against the inner sides of the depressed portions 24 and 25 when it is desired to rotate the plates to open the shuttle, and as soon as the projections are raised out of the notches the tongues move away from the depressed portions to the higher flange sections and friction is then maintained by the interposition of the projections between the plate 11 and the higher flange portions until the projections again reach the depressed portions and the tongues are again in register with the notches. The plates are slightly overbowed, that is, their bowing is such that when they approach parallelism their ends will glide over each other under pressure due to such over-bowing, and such pressure will assist the projections 22 and 23 in locking the plates together in closed position. The pressure at the plate ends is also sufficiently yielding to allow the thread to readily pass from one side of the shuttle to the other between the ends.

The tongues 16 and 17 and the projections 22 and 23 can be readily formed on plate 11 by deflecting portions thereof in suitable dies, and the plates themselves and the flange part 13 can be readily formed by simple dies, the construction being thus very simple and very strong.

I do not of course desire to be limited to the exact details of construction and arrangement shown and described as changes and modifications are no doubt possible which would still come within the scope of the invention. I claim as follows:

1. In a tatting shuttle, the combination of two elliptical plates, a bobbin hub secured to one of the plates and having a flange at its outer end, said flange having openings, tongues on said other plate adapted to pass through said openings when the plates are brought together at an angle with each other and to pass underneath the flange to lock the plates against separation when the plates are rotated away from their angular position, and an abutment on said tongued plate adapted to spring into one of said openings when the plates are brought into parallelism to yieldingly lock the plates against relative rotation.

2. In a tatting shuttle, the combination of two elliptical plates, a bobbin hub extending from one of said plates and having a flange at its outer end provided with openings, tongues on said other plate adapted to pass through said openings when said plates are brought together at an angle with each other and to then engage the under side of said flange to lock the plates against separation when said plates are rotated away from said angular position, a projection on said tongued plate engaging said flange to exert pressure thereagainst tending to hold the tongues firmly against the under side of the flange, said projection being in position to spring into one of said openings when the plates are brought into parallelism to then coöperate with the opening edges to yieldingly lock the plates against relative rotation.

3. In a tatting shuttle, the combination of two elliptical plates, a disk on one of said plates having openings therethrough, tongues on said other plate adapted to pass through said openings when said plates are brought together at an angle with each other and to engage the underside of said disk to lock the plates against separation when they are rotated away from their angular position, a projection on said tongued plate, a depression in said disk for receiving said projection when said plates are first brought together to apply the tongues in said openings, said projection riding out of the depression to the adjacent higher sections of the disk when the plates are turned to thereby force the tongues to engage frictionally with said disk, the position of said projection being such that it will spring into one of said openings when the plates are brought in parallelism to then yieldingly lock the plates against relative rotation.

4. In a tatting shuttle, the combination of two elliptical plates, a disk on one of said plates having openings therethrough, tongues on said other plate adapted to pass through said openings when said plates are brought together at an angle with each other and to engage the under side of said disk to lock the plates against separation when they are rotated away from their angular position, a projection on said tongued plate, a depression on said disk for receiving said projection when said plates are first brought together to apply the tongues in said openings, said projection riding out of the depression to the adjacent higher sections of the disk when the plates are turned to thereby force the tongues to engage frictionally with said disk, the location of said projection and depression being such that when the plates are rotated into parallelism said

projection will spring into one of said openings and one of said tongues will be in position below said depression.

5. In a tatting shuttle, the combination of two elliptical plates, a bobbin hub on one of said plates having a flange at its outer end provided with diagonally opposite notches, tongues on said other plate adapted to pass through said notches to the under side of the flange when said plates are brought together at an angle with each other and to then engage the under side of the flange and then to pass below the flange adjacent said openings when said plates are turned away from said angular position, said flange having diagonally opposite depressions intermediate said notches, projections on said other plate for engaging in said depressions to permit passage of the tongues through said notches when the plates are first brought together, said projections riding out of said depressions and over the flange to draw the tongues into frictional engagement with the under side of the flange when the plates are rotated away from such angular position, the location of the projections and depressions being such that when the plates are brought into parallelism said depressions will spring into said notches and said tongues will engage under said depressions whereby their frictional engagement with the flange will be maintained and said plates will be yieldingly locked against relative rotation by the coöperation of said projections with the notch sides.

6. In a tatting shuttle, the combination of two elliptical plates bowed longitudinally, a bobbin carried by one plate and having a flange, said flange having slots, and tongues on the other plate adapted to pass through said slots when the plates are at an angle with each other and to pass into position underneath the flange when the plates are rotated whereby to lock the plates together, said flange having depressed portions intermediate said slots for exerting pressure against said tongues to yieldingly lock the plates together when they are in parallelism.

In witness whereof I have hereunto set my hand this 13th day of May, A. D., 1915.

AUGIE L. HANSEN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."