

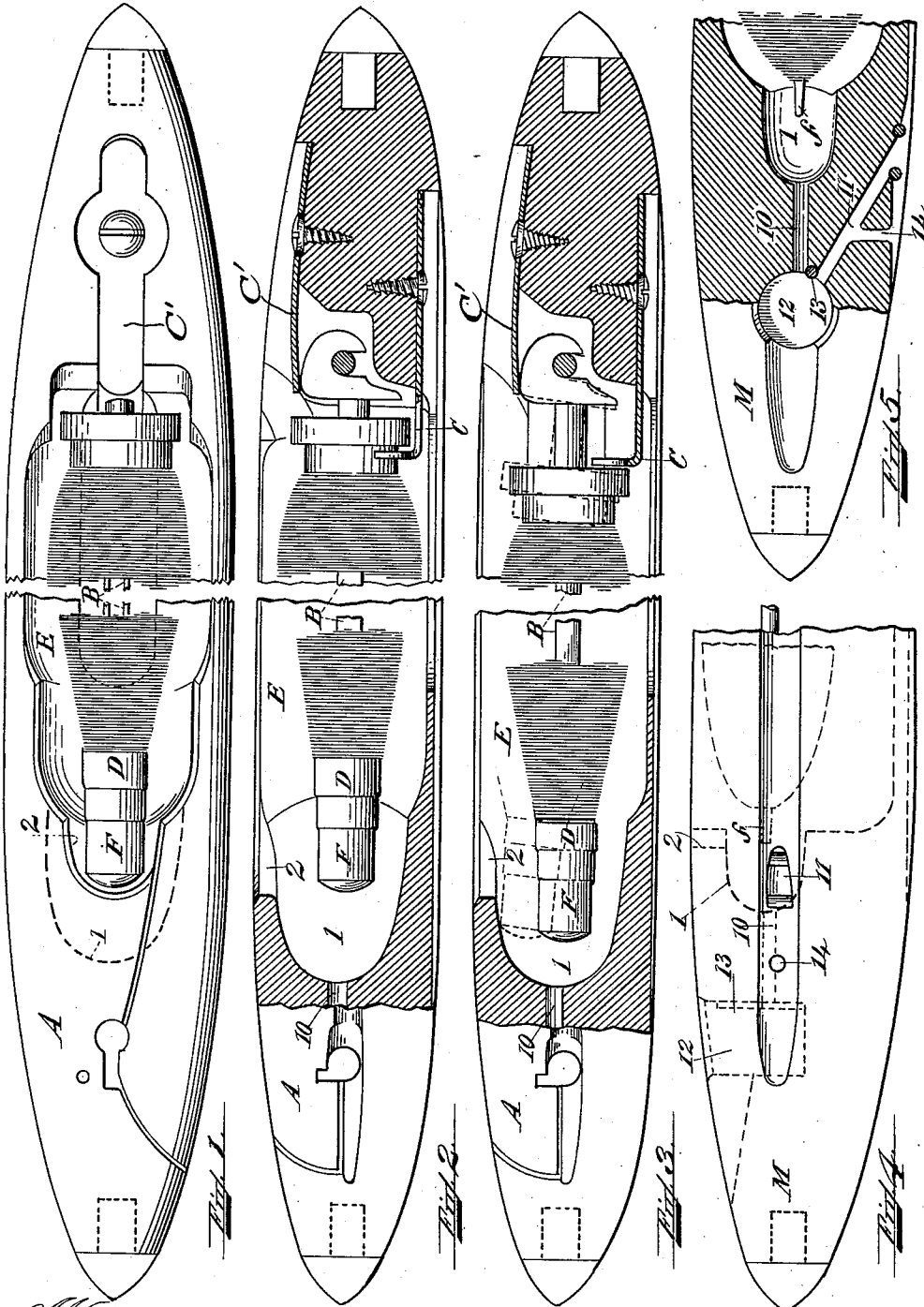
T. MOONEY.

LOOM SHUTTLE.

APPLICATION FILED JAN. 11, 1909.

1,023,952.

Patented Apr. 23, 1912.



Witnesses:
E. F. Amos.
W. C. Remick.

Inventor:
Timothy Mooney
by his attorney
Charles F. Richardson

UNITED STATES PATENT OFFICE.

TIMOTHY MOONEY, OF YORKVILLE, NEW YORK.

LOOM-SHUTTLE.

1,023,952.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed January 11, 1909. Serial No. 471,557.

To all whom it may concern:

Be it known that I, TIMOTHY MOONEY, a citizen of the United States, residing at Yorkville, in the county of Oneida and State of New York, have invented a certain new and useful Improvement in Loom-Shuttles, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to loom-shuttles, and its principal objects are 1st, to reduce the swirl of the unwinding filling thread; 2nd, to prevent "bobbin smashes"; and 3rd, to control the tension of the unwinding filling thread.

The first object is attained by providing the throat of the shuttle with a longitudinal thread cavity and by having the end of the spindle in a cop shuttle, or the end of the bobbin in a bobbin shuttle, project into the cavity.

The second object is attained by causing the cavity, the end of the bobbin, and the bobbin catch to bear such relations to each other that should the catch fail to hold the bobbin in normal position, the end of the bobbin could not be raised out of the thread cavity, and thus could not engage and destroy the warp threads; that is, there would be no "bobbin smash."

The third object results not only from the construction involved in the attainment of the first object, but also from two connected thread passages lying in substantially the same plane but at an acute angle with each other; one of said passages leading from the throat of the shuttle, and the other leading outside of said shuttle.

In the drawings illustrating the principles of my invention and the best means now known to me of embodying these principles, Figure 1 is a plan showing those features of my invention, with which the first and second objects may be attained, embodied in a hand threaded shuttle; the middle portion of the shuttle being broken out; Fig. 2 is a longitudinal section to show the bobbin, in normal position; its catch; and the free end of the bobbin projecting into its whirl reducing chamber. Fig. 3 is a similar view showing how the end of the bobbin cannot rise out of the whirl chamber, if the bobbin is accidentally released from the catch. Fig. 4 is a longitudinal and horizontal section of the features whereby the first and the third objects of my invention

may be accomplished. Fig. 5 is an elevation of what is shown in Fig. 4.

The hand threaded shuttle A, shown in Figs. 1, 2 and 3, has the usual pivoted spindle B, bobbin catch C, and spring C'. On the spindle may be removably mounted a bobbin D which may be held in a fixed relation thereto by the engagement of the catch with the collar or head of the bobbin, while the spindle and bobbin lie in normal position in the bobbin chamber E. All of which construction is old and well known.

Leading longitudinally from the throat of the bobbin chamber E is a whirl reducing thread chamber 1, having its surfaces correspond in substance to those of a semi-ovoid; the base of the whirl chamber constituting roughly the opening between the said chamber and the bobbin chamber. The free end portion F of the bobbin, when in normal position in the shuttle, extends through the opening between the bobbin chamber and the whirl reducing chamber, see Fig. 2, and lies within the latter chamber. But in order that said end portion of the bobbin may be moved into and out of said position, another opening, as 2, corresponding in size and shape to the section of said free end portion F, of the bobbin, is made in the top of the shuttle constituting a part of the wall of the whirl reducing chamber. A thread passage 10 opens out of the forward end of the whirl reducing chamber. An inspection of Figs. 1 and 2 will make plain the fact that the curved surfaces of the whirl reducing chamber counteract, in fact limit, the tendency of the rapidly unwinding thread to "balloon out" or form a big whirl, which, if permitted, would likely result in unthreading the shuttle; the latter being assumed to have any of the well known hand threading devices and passages; such, for example, as indicated. It has been found that by reducing the whirl of the thread the latter has a desirable tension. Instead of unwinding with a wide swirl, the thread is compelled to unwind close to the spindle; in fact, there are several coils around the spindle, thus giving an easy but decided tension to the thread. A further benefit follows from the above construction. Sometimes the catch C fails or ceases to engage the bobbin while the latter is in normal position in the shuttle; and when it does, the bobbin moves toward the end of the spindle, see Fig. 3, and any

tendency on the part of the spindle and bobbin to turn about the pivot, is counteracted by the engagement of the free end F of the bobbin with the under side of the top portion of the whirl reducing chamber, in the manner indicated in dotted lines. In short, by this construction, the swirl of the unwinding thread is reduced; the likelihood of the hand threaded shuttle becoming unthreaded is practically eliminated; and the tension of the unwinding thread is that desired.

Heretofore in using what is known as a duck shuttle, which is loaded with heavy ply filling, an elastic cover is employed to close what would be the open top of the spindle chamber; one end of the cover being secured to the shuttle, at the base of the spindle, and the other end provided with a ring which is hooked over a hook fixed in the throat of the shuttle for that purpose. Now by providing a duck shuttle M, Figs. 4 and 5, with my whirl reducing chamber 1, and designing the free end portion f of the spindle b to lie, when in normal position, within the whirl reducing chamber, the necessity of using the elastic cover is done away with. That the end portion f of the spindle may be moved into and out of the chamber, a small opening 2, corresponding in cross section to that of the free end portion of the spindle, is made in the top of the chamber. In substance, in so far as the whirl reducing effect on the unwinding thread is concerned, the chamber and free end portion of the spindle of the duck shuttle, are the same as the chamber and free end portion of the bobbin of the hand threaded shuttle.

A further feature of my invention is illustrated in the above mentioned duck shuttle, and resides in two connected thread passages 10, 11, of small diameter, leading from the bobbin chamber. The first passage 10, is an elongation of the whirl chamber, and

leads therefrom substantially in the longitudinal axis of the shuttle, into a cylindrical well 12, in the top of the head of the shuttle. Lying, say, in the same horizontal plane with the first passage but at an acute angle therewith, is the second thread passage 11, which leads outwardly and rearwardly from said well; a vertical steel pin 13 being fixed in the side of the well, and between the two converging passages, and serving as a wearing surface for the thread leaving the shuttle. This angle between these two thread passages is about 45°, and gives a satisfactory tension to the thread. Should more tension be required, then the thread may be led from the second passage through a secondary passage 14, at right angles to the first passage 10, or to the side of the shuttle.

All the features of my invention have now been described; and desiring to protect the same in the broadest manner legally possible, what I claim is:—

A shuttle provided with a bobbin cavity, a bobbin spindle pivoted at one end of said bobbin cavity, a spring tending to hold the same in horizontal or raised position, a bobbin catch adapted to engage the base of the bobbin to prevent axial movement on the spindle, and an overhanging wall at the delivery end of the bobbin cavity extending to the rear such a distance as to permit the end of the bobbin to just clear the rear edge of the overhanging wall when the bobbin is properly positioned on the spindle and the spindle is raised, but to catch the end of the bobbin if it has moved forward on the spindle and prevent the bobbin and spindle from being raised.

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

TIMOTHY MOONEY.

Witnesses:

JOHN WALSH,
IRENE M. SHERRY.

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