

UNITED STATES PATENT OFFICE.

ERNEST GERHARDTS, OF WESTBROOK, MAINE.

TENSION DEVICE FOR LOOM-SHUTTLES.

No. 878,720.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed February 18, 1907. Serial No. 358,068.

To all whom it may concern:

Be it known that I, ERNEST GERHARDTS, a citizen of the United States, residing at Westbrook, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Tension Devices for Loom-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 a tension device for loom shuttles.

The object of the invention is to provide a tension device disposed in the body of the shuttle which is simple in construction, cheap and durable, and which will facilitate the regulation of the tension on the thread as it is taken from the bobbin, insuring an even and uniform distribution of the filling and securing the accurate binding of the cloth in weaving.

Figure 1 of the accompanying drawings, represents a top plan view of the shuttle embodying this improved tension device, and having parts broken out; Fig. 2 represents a longitudinal vertical section thereof; and Fig. 3 represents a detail perspective view showing this improved tension device in position in a shuttle.

In the embodiment illustrated, the shuttle bobbin, 1, is of ordinary construction, having any desired form of bobbin spindle, 2, and bobbin holder, 3, with the ordinary tension device, or shuttle arm, 4, and pins, 5, arranged in a chamber at the front end thereof. This improvement consists in a tension device arranged in a recess or chamber, 6, at the end of the bobbin chamber, 7, and separated by a bridge or wall, 8, from the tension chamber at the forward end of the shuttle. Extending transversely across the bottom of the chamber, 6, at its rear end are two laterally spaced pins, 15 and 16. Mounted on the lower pin, 15, is a coiled spring, 17, having one end extending forwardly and flared outwardly and having its other end adapted for use as a flier, 18, forming a hair-pin-shaped member. This flier 18 projects forwardly in the chamber, 6, and is provided

with a plurality of longitudinally spaced rings, or eyes, as 19, any desired number of which may be employed. The pin, 16, is designed as a guard for the spring, 17, to prevent the yarn from becoming entangled therewith. Disposed across said chamber, 6, above said arm, 18, are a plurality of pins, as 20, arranged in step-like succession, one between each of the rings, as 19, of the arm, 18. Extending through the end wall, or bridge, between the chamber, 6, and the tension chamber at the front of the shuttle, is a thread passage or channel, 9. The arm, 4, merges at one end into a coiled spring, which is mounted loosely on a screw, on which the arm, 4, swings laterally. This arm, 4, is provided with the usual spaced rings with which the pins, 5, alternate. One end of the spring to which the flier, or arm, 4, is connected, projects into a recess, 12, in the side of the shuttle and has connected thereto the spring, 13, disposed in said recess, 12. A thread passage, 14, extends through the top wall of the chamber at the front of the shuttle.

To thread a shuttle having this improvement applied thereto after a filled bobbin has been placed on the spindle, 2, the thread or yarn, 30, is passed over the pin, 16, and the first of the pins, as 20, and then through the rings or eyes, as 19, and over the succeeding pins, as 20, alternately, then through the channel or passage, 9, and around the pins, 5, and through the eyes of the shuttle arm, 4, alternately, and then out through the opening, 14, in the top wall, and the shuttle is then ready for use.

I claim as my invention:

1. A loom shuttle having a bobbin chamber, a chamber arranged in the front end thereof and having a shuttle arm or tension device operable therein, a chamber arranged between said bobbin chamber and said shuttle arm chamber, and an auxiliary tension device mounted in said intermediate chamber.

2. A loom shuttle having a bobbin chamber and a chamber at its front end, a laterally swinging shuttle arm disposed in said last mentioned chamber, a chamber ar-

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ranged at the rear of said shuttle arm chamber between it and the bobbin chamber and having pins extending transversely thereof, and a spring-pressed tension device mounted
5 to swing in said last mentioned chamber and having means for engaging said pins.
In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

ERNEST GERHARDTS.

Witnesses:

W. M. LAMB,
MAUDE SWAN.