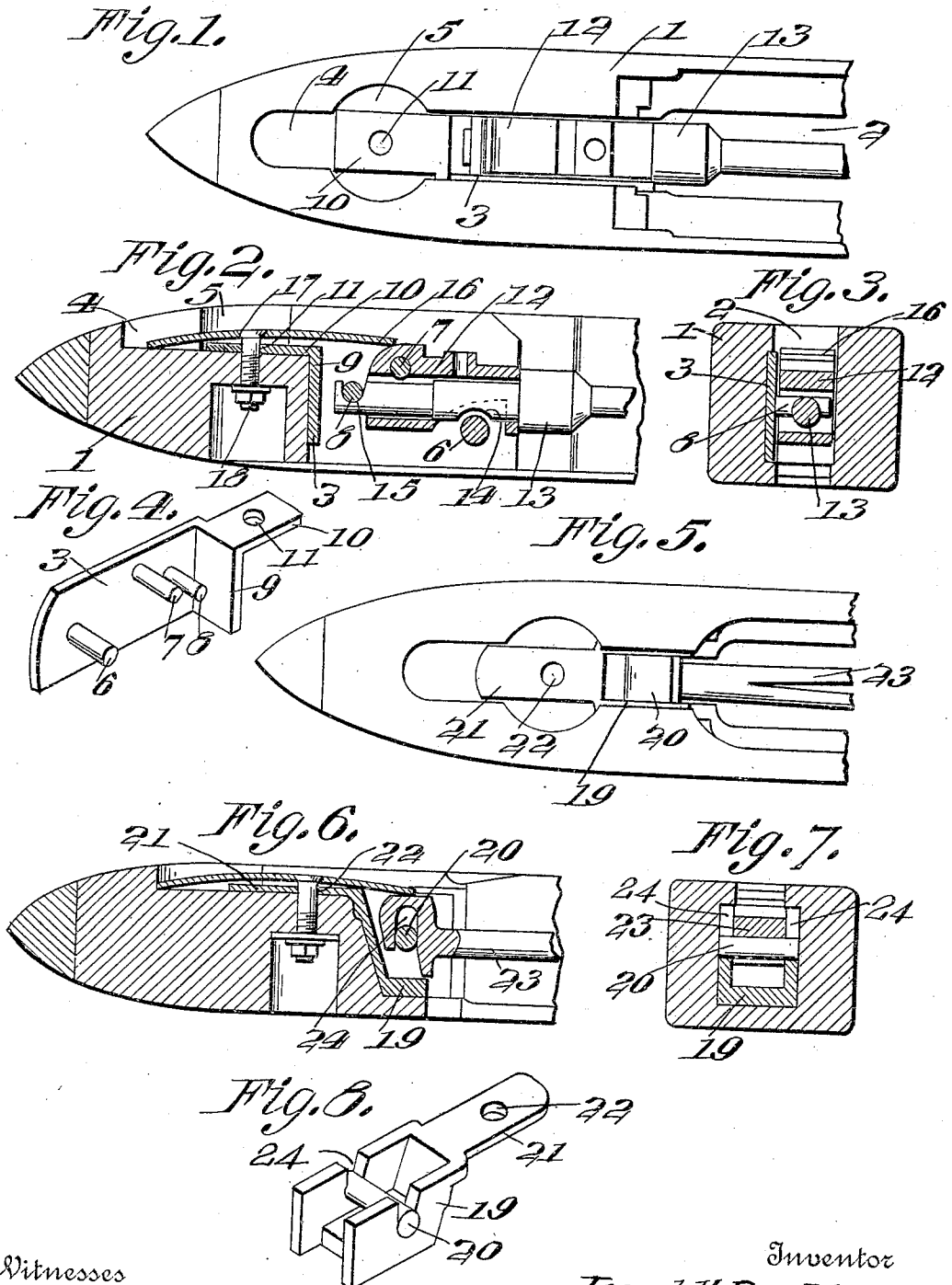


J. H. DEVLIN.
PINLESS SHUTTLE.
APPLICATION FILED SEPT. 22, 1908.

932,450.

Patented Aug. 31, 1909.



Witnesses
E. D. Brown
C. H. Griesbauer.

Inventor
Joseph H. Devlin,
by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH H. DEVLIN, OF PROVIDENCE, RHODE ISLAND.

PINLESS SHUTTLE.

932,450.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed September 22, 1908. Serial No. 454,164.

To all whom it may concern:

Be it known that I, JOSEPH H. DEVLIN, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Pinless 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 the production of a pinless shuttle provided with a removable box for pivotally securing spindles to the shuttle.

One of the objects of the invention is the production of a shuttle provided with means for securing spindles thereto, which means may be slidably positioned on the shuttle.

Another object of the invention is the production of a spindle-securing box which may be removably secured to a shuttle without the aid of the usual locking pins.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be described and particularly pointed out in the appended claims, and in the drawings, in which—

Figure 1 is a plan view of my improved shuttle with the usual securing spring removed; Fig. 2 is a longitudinal sectional view thereof; Fig. 3 is a transverse sectional view; Fig. 4 is a perspective view of a spindle-securing box; Fig. 5 is a plan view of a modification with the usual securing springs removed; Fig. 6 is a longitudinal sectional view thereof; Fig. 7 is a transverse sectional view thereof; and Fig. 8 is a detail perspective view of a modified form of a securing box.

In the drawings 1 denotes a shuttle body which is formed with a longitudinal groove, 2, adapted to receive a spindle-securing box. 3. The shuttle body 1 is formed with the usual spring-receiving groove, 4, and a transverse opening 5, adapted to accommodate a locking pin.

The spindle-securing box, 3, is provided with a plurality of pins, 6, 7 and 8, and is formed with a bent end, 9, having longitudinally projecting offset, 10, which offset or arm is formed with an aperture, 11. The pin, 7, of the spindle-securing box, 3, normally extends through an opening formed in a removable spindle head, 12, which head

is provided with an opening through which a spindle, 13, is arranged to extend whereby said head is detachably secured to the shuttle body. The spindle, 13, is formed with the usual grooves, 14 and 15, which grooves are arranged to receive the pins, 6 and 8, of the spindle-securing box, 3.

The spindle-securing box, 3, is positioned on the spindle body, 1, so that the bent end, 9, of said box will abut with one of the shoulders of the shuttle, and the offset or arm 10 will be seated in the groove, 4, formed in the shuttle body with the aperture, 11, of said offset alining with the aperture, 5, of the shuttle body. The spindle-securing box 3 is secured to the shuttle body 1 by means of a curved spring 16, which is formed with the usual opening, 17, and a locking pin, 18 which is extended through the apertures 5 and 11. When secured to the shuttle body, 1, the spindle-securing box, 3, firmly secures a spindle in an efficient manner without in any way weakening the shuttle body or operating to interfere with the uniform weaving of threads.

In Figs. 5, 6, 7 and 8, I have illustrated a modified construction of my improved spindle-securing box, comprising a box formed with a single pin for directly securing a spindle to a shuttle body. In these figures 19 designates a modified spindle-securing box which is provided with a pin, 20, and formed with an offset, 21, having an opening, 22. The end and the top of the spindle-securing box, 19, is open to receive the head of a spindle, 23, and is preferably provided with slots, 24. The spindle-securing box, 19, is secured to the shuttle body in substantially the same manner as the spindle-securing box, 3.

My improved spindle-securing box and pinless shuttle increases the life of a shuttle and reduces the labor of a fixer and weaver by preventing miss-picks and the breaking of the filling. In the shuttles in common use, the spindles are secured to the shuttle body by means of pins which extend across said body, and in time these pins become loose and cause the spindles to work and the shuttle to split before it is worn out.

From the foregoing description, taken in connection with the accompanying drawing, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the

5 appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:

1. In combination with a shuttle body, 10 provided with a longitudinal groove, leaving an off set portion at one end of the body, a spindle securing box arranged in the grooved portion of the shuttle body and provided at one end with a longitudinal extension 15 resting on the offset-portion thereof, a spindle head, a pin projecting laterally from the body of the spindle securing box through the spindle head to secure the latter in position, a recessed spindle projecting through 20 the spindle head, a pair of pins projecting laterally from the body of the spindle securing box on opposite sides of the first mentioned pin for engaging the recessed portions of the spindle and a bolt extending 25 through the longitudinal extension of the spindle securing box and the off-set portion of the shuttle body for securing the box in position.

2. In combination with a shuttle body 30 provided with a longitudinal groove leaving an offset portion at one end of the body, a spindle securing box arranged in the grooved portion of the shuttle body and provided at one end with a longitudinal extension resting on the offset-portion thereof, a spindle 35 head, a pin projecting laterally from the body of the spindle securing box through the spindle head to secure the latter in position, a recessed spindle projecting through 40 the spindle head, a pair of pins projecting laterally from the body of the spindle securing box on opposite sides of the first mentioned pin for engaging the recessed portions of the spindle a spring arranged in 45 the grooved portion of the shuttle body with one end bearing upon the top of the off set portion thereof and with its other end rest-

ing upon the spindle head and a bolt extending through the spring, the longitudinal extension of the spindle securing box, and 50 the off-set portion of the body for securing both the spring and box in position.

3. In combination with a shuttle body formed with a longitudinal groove leaving an off-set portion at one end thereof, a 55 spindle securing box comprising a flat body provided at one end with a lateral portion having a longitudinal extension, arranged in the groove of said body with its body fitting against one of the side walls thereof, 60 its extension resting upon the top surface of the off set portion of the body and its lateral portion fitting against the side wall of said off-set portion, a spindle head arranged in the grooved portion of the shuttle body, a 65 spindle extending through said head and means formed on the body of the spindle securing box for securing the spindle and spindle head in position.

4. In combination with a shuttle body 70 formed with a longitudinal groove, leaving an off-set portion at one end thereof, a spindle securing box comprising a flat body provided at one end with a lateral portion having a longitudinal extension, arranged in 75 the groove of said body with its body fitting against one of the side walls thereof, its extension resting upon the top surface of the off set portion of the body and its lateral portion fitting against the side wall of said 80 off-set portion, a spindle head arranged in the grooved portion of the shuttle body, a spindle extending through said head and a plurality of longitudinally spaced lateral pins for securing the spindle head and spindle 85 in position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH H. DEVLIN.

Witnesses:

CHARLES H. KEENAN,
JAMES E. CUMMSKEY.