

(No Model.)

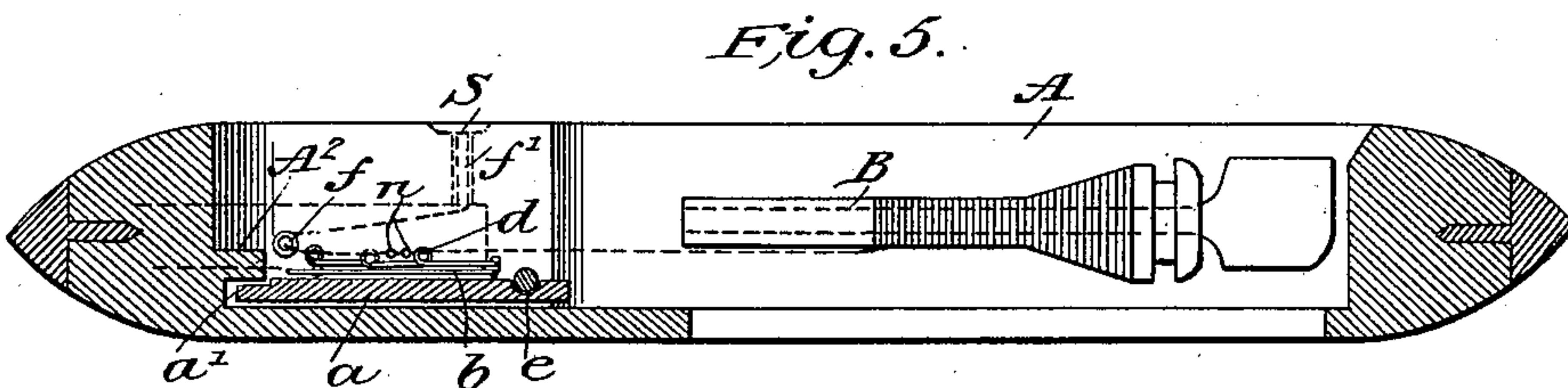
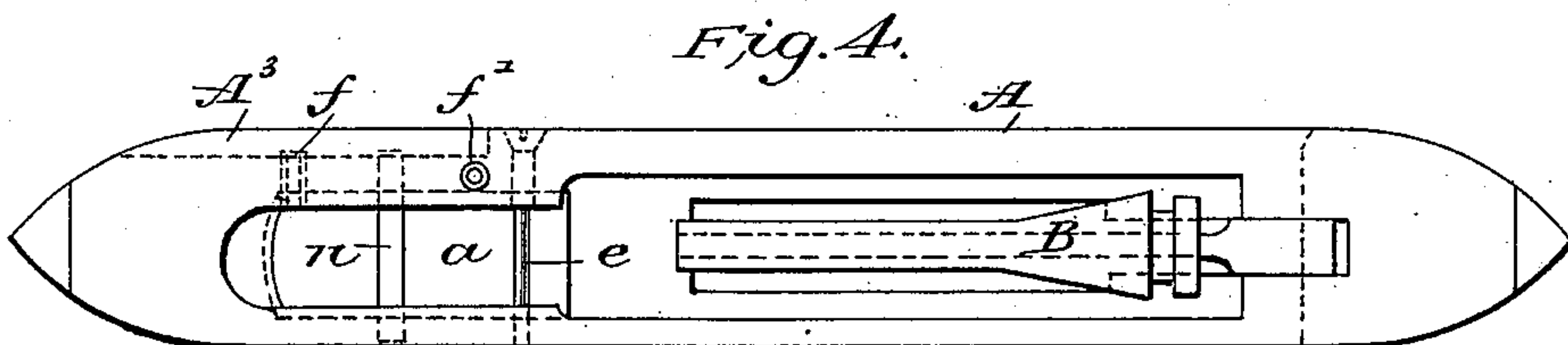
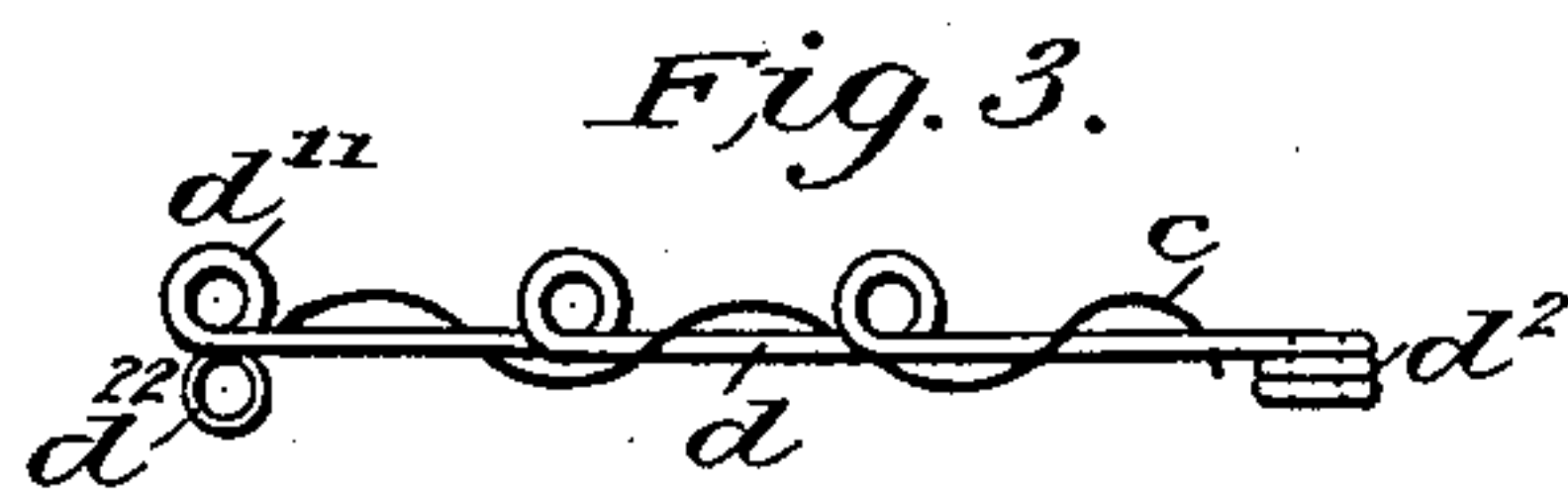
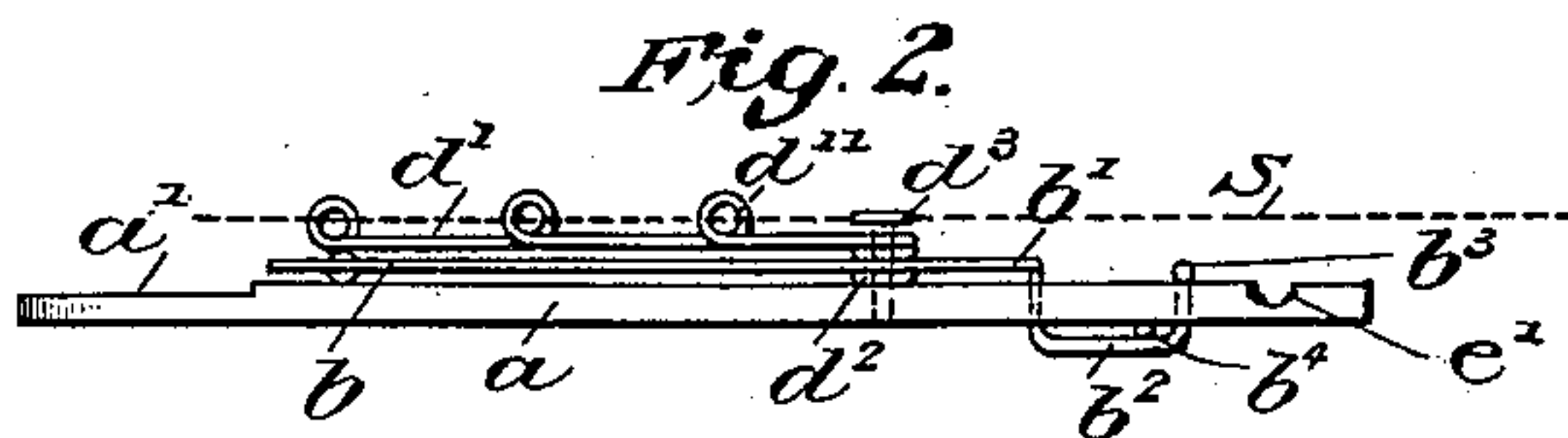
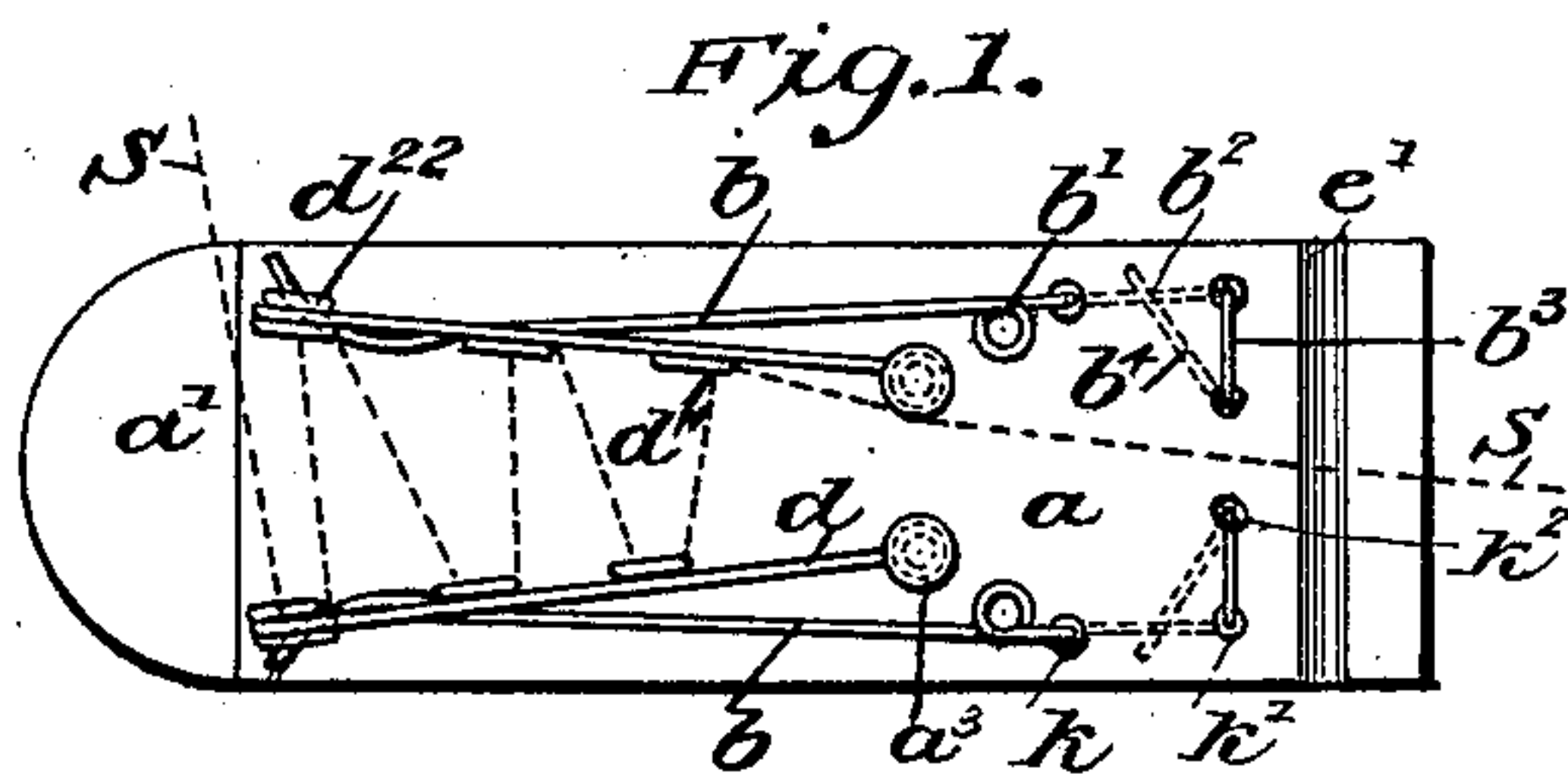
B. WESTON, Dec'd.

R. WHITLEY, Administrator.

TENSION DEVICE FOR LOOM SHUTTLES.

No. 587,352.

Patented Aug. 3, 1897.



Witnesses.

Wm. M. Drew.  
David Edelman

Inventor.

Ralph Whitley.  
Administrator of  
Buckley Weston, dec'd,  
By John F. Kerr,  
att'y.



# UNITED STATES PATENT OFFICE.

RALPH WHITLEY, OF PATERSON, NEW JERSEY, ADMINISTRATOR OF  
BUCKLEY WESTON, DECEASED.

## TENSION DEVICE FOR LOOM-SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 587,352, dated August 3, 1897.

Application filed October 11, 1895. Renewed June 22, 1897. Serial No. 641,822. (No model.)

*To all whom it may concern:*

Be it known that BUCKLEY WESTON, deceased, late of the city of Paterson, in the county of Passaic and State of New Jersey, in his lifetime invented certain new and useful Improvements in Tension Devices for Shuttles, of which the following is a specification.

This invention relates to tension devices for that class of shuttles employed in weaving broad silk goods.

The object of the invention is to secure the accurate binding of the cloth by the use of tension-springs employed as hereinafter set forth and to afford facilities for the proper adjustment of the springs and to regulate the tension thereof with alacrity. These objects are attained by placing the tension device within the shuttle, as shown in the drawings and hereinafter described.

In what is commonly known as the "French" shuttle a semicircular plate is secured to the outside of the shuttle, and arms provided with guides as well as tension-springs are secured to said plate, all of which necessitates the use of a lathe constructed specially for their use, the projection on outside of shuttle working outside of the lathe.

By this improvement the same if not better results are accomplished as by the French shuttle by employing a plate of metal or other suitable material three-quarters of an inch in width by about three inches in length, which is placed within the shuttle on the bottom thereof and to which are secured guide-arms and tension-springs so as to extend longitudinally along the same in the bottom of the shuttle, as shown in the drawings.

In the drawings, Figure 1 is a plan of the device. Fig. 2 is a side or edge view. Fig. 3 is a detail view of eyebar with binder. Fig. 4 is a plan of shuttle with device in position, and Fig. 5 is a longitudinal section of the same.

In the drawings, A is the shuttle; A<sup>2</sup>, a lip-engaging device; A<sup>3</sup>, a groove in side of shuttle; B, the quill; S, the filling.

a is the plate of the device, which is provided with the engaging lip a', adapted to slide under the projecting part of the shuttle A<sup>2</sup> when the plate a is slid along the bottom of the shuttle into its proper position.

When the plate a is in its proper position, it is securely held there by means of the securing pin or screw e, which passes transversely through the sides of the shuttle along the transverse groove e' in the top of the plate a.

A spring b, having a coil b', is secured to the plate a by means of the loops b<sup>2</sup> b<sup>3</sup> b<sup>4</sup>, formed by passing the steel wire through and under the plate by means of the small perforations or openings shown in Fig. 1.

A looped tension-bar d, or, rather, a pair of the same, are secured to the plate a by screws or rivets a<sup>3</sup>. On the back of each of said loop tension-bars is an eye d<sup>22</sup>, through which the end of the spring b passes and is permitted to move as the loop-bar is operated by the tightening or loosening of the thread or filling S. The loop tension-bar d is provided with the desired number of loops or eyes d<sup>11</sup>.

f and f' are the ordinary eyelets in shuttle for filling.

In the construction of this new tension device strength and durability are attained by winding a copper wire c around the steel loops d<sup>11</sup> and soldering the same together to prevent the loop from opening or breaking by the concussion of the shuttle. Two or more threads or cords of any suitable material, as indicated by the letters n n in the drawings, are passed from one side of the shuttle to the other, over which cords the filling passes from the quill to the eyes in the tension-bars to prevent it from becoming entangled or caught in the springs. To regulate the tension of the springs, they may be adjusted for that purpose by increasing or diminishing the number of the coils b', thereby varying the length of the springs b. The springs being constructed of a very fine and delicate wire which is easily manipulated, the length of the springs may be changed with facility for the purpose of regulating the tension.

Instead of passing the ends of the tension-springs through the lower eyes d<sup>22</sup> of the tension-bars d d said tension-springs b b may have the ends thereof coiled around said tension-bars d d at a point anywhere between the engaging ends d<sup>2</sup> of said tension-bars and the nearest loops thereon without varying



from the essential principles of the invention, which consist in the combination, with a shuttle, of the plate *a*, placed within the shuttle and extending longitudinally along the bottom of the same, as shown in the drawings, the two looped tension-bars secured to said plate, the two tension-springs also secured to said plate being provided with the coils *b'*, the ends of said tension-springs *b* being loosely connected with the loop tension-bars to afford the tension required.

With this description of the invention, what is claimed is—

In a tension device for shuttles the combination with the shuttle, having the projection or lip *A*<sup>2</sup>, of the plate *a* having the engaging lip *a'* adapted to slide under the projecting lip *A*<sup>2</sup>, said plate extending longitudinally along the bottom of the shuttle, in-

side thereof, and being provided with the groove *e'* and secured therein by screw *e* which passes transversely through the shuttle along the groove *e'* in the plate *a*; the looped tension-bars *d d* secured at their engaging ends *d*<sup>2</sup> to said tension-plate, the tension-springs *b b* secured to the plate *a* and provided with the coils *b'*, the ends of said tension-springs *b b* being loosely connected with said looped tension-bars *d*, and cords *n n* passed from side to side of shuttle to prevent the silk from catching in the springs, all constructed substantially as shown and described and for the purposes specified.

RALPH WHITLEY,  
*Administrator of the estate of Buckley Weston.*

Witnesses:

WM. M. DREW,  
EMMET O'BRIEN.