

(No Model.)

A. ISHERWOOD.
LOOM SHUTTLE.

No. 496,879.

Patented May 9, 1893.

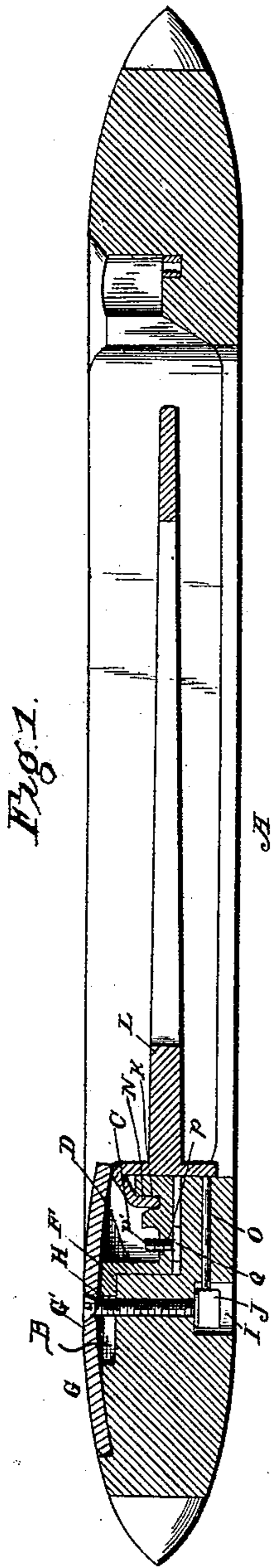


Fig. 1.

Fig. 2.

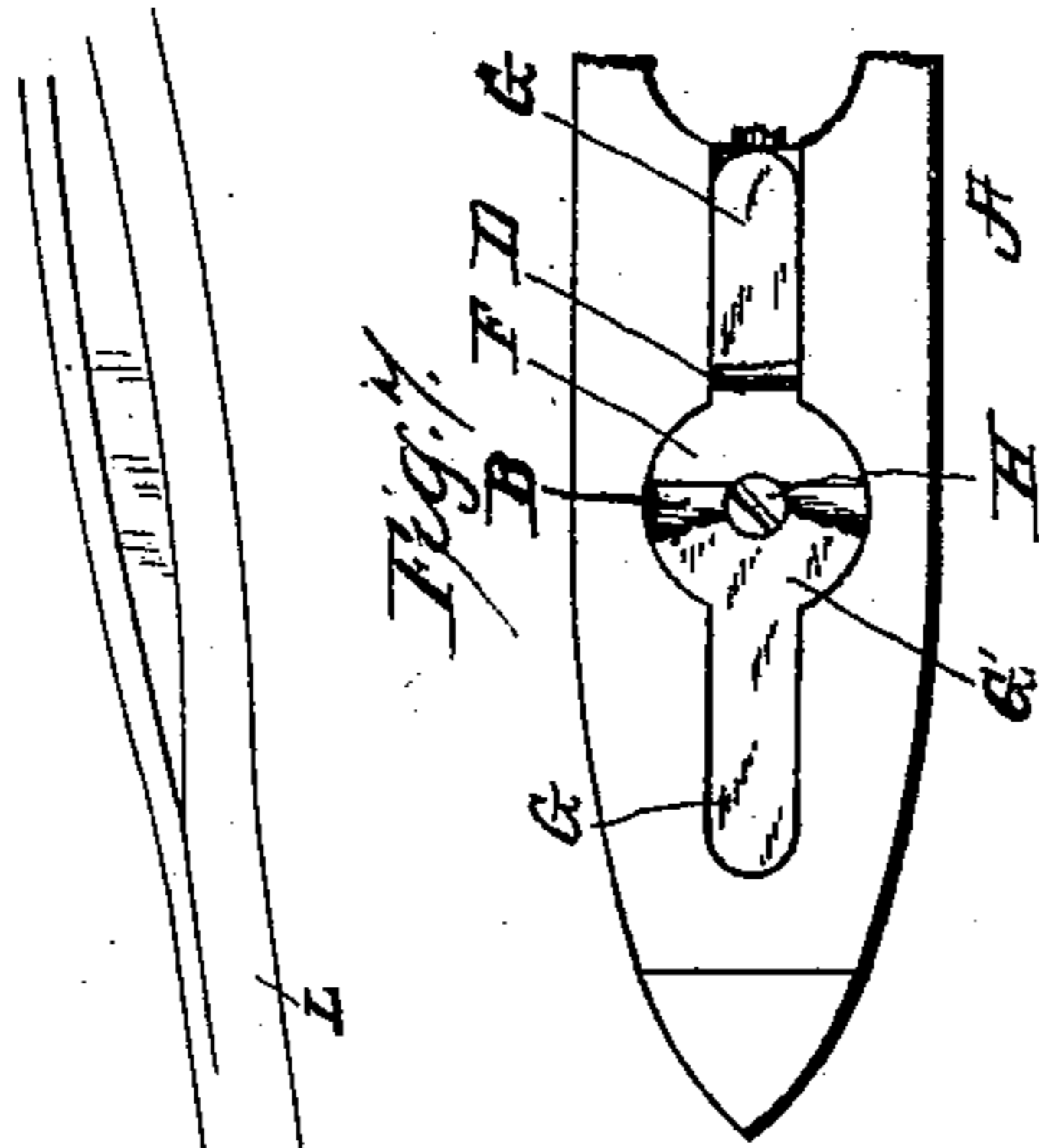


Fig. 3.

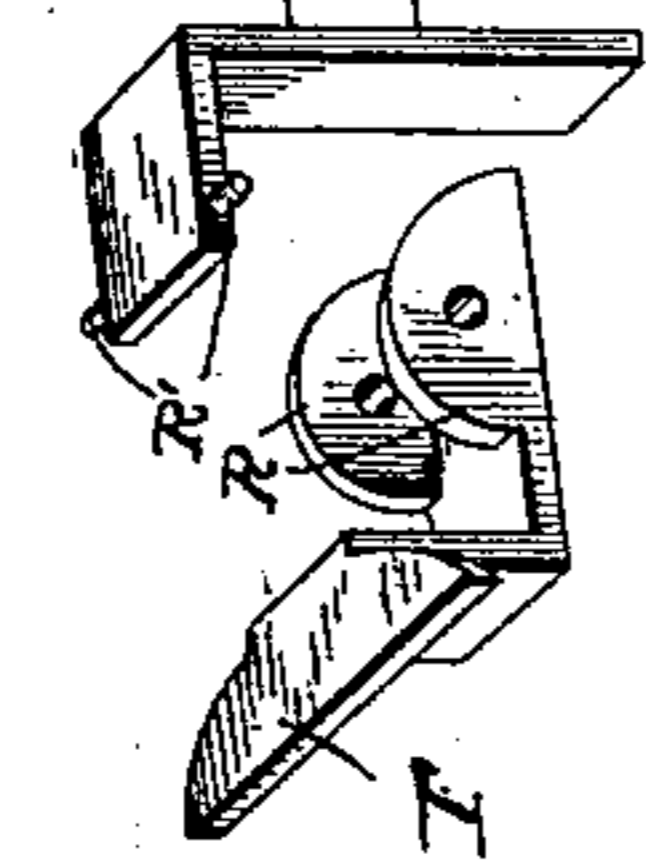


Fig. 4.

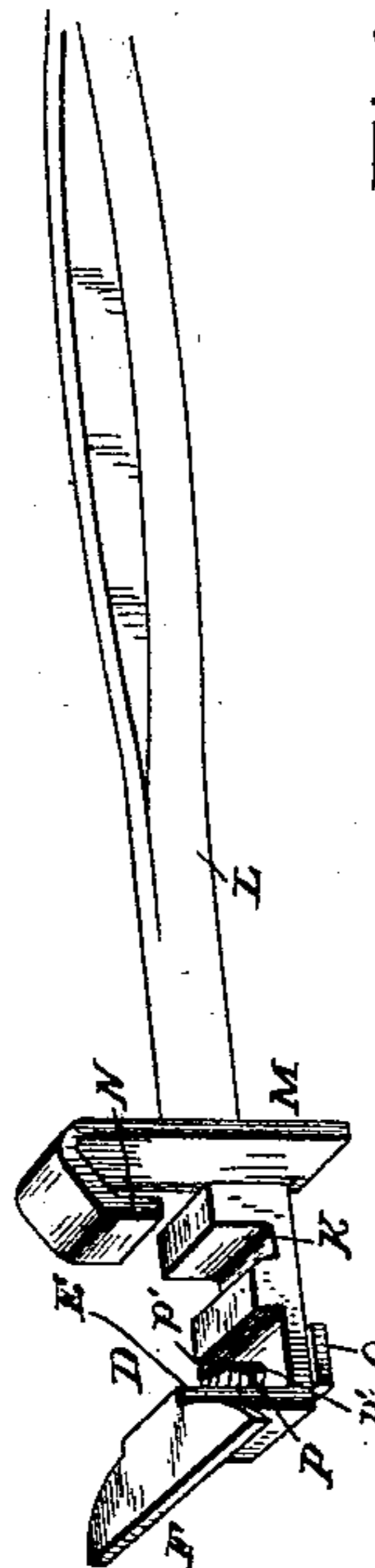
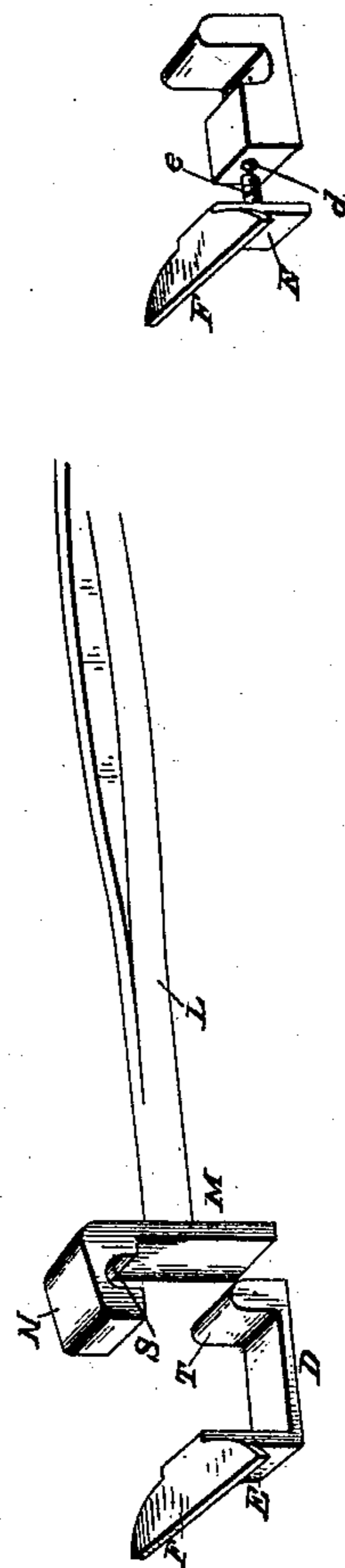
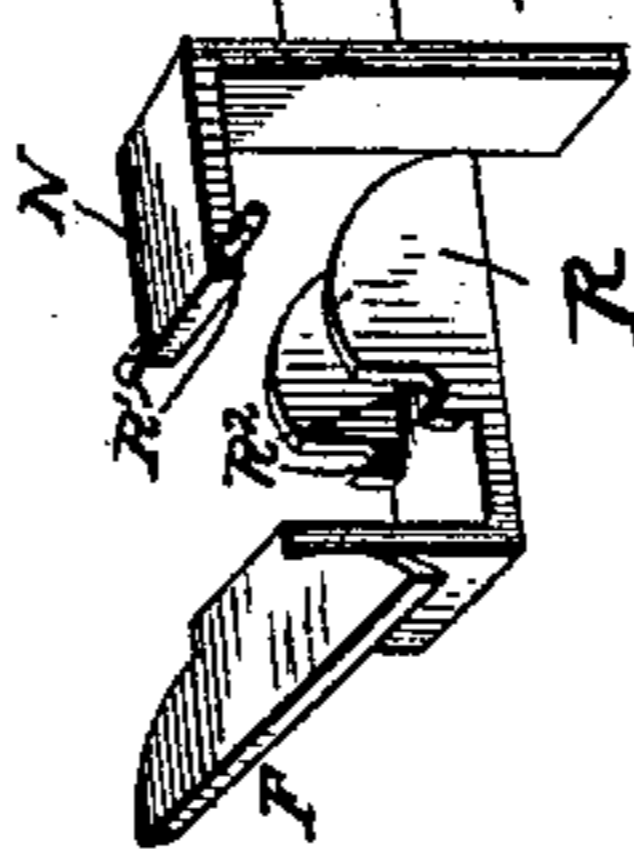


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED ISHERWOOD, OF NEW BEDFORD, MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 496,879, dated May 9, 1893.

Application filed April 6, 1892. Serial No. 428,086. (No model.)

To all whom it may concern:

Be it known that I, ALFRED ISHERWOOD, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful Loom-Shuttle, of which the following is a specification.

This invention, relates to loom shuttles; and it has for its object to provide improvements for securing the cop-spindle within the shuttle body and means for adjusting the same.

To this end it is the main and primary object of the present invention to provide means for pivotally securing the spindle in place so that the disadvantages of having the pivot pins working in the pin holes in the shuttle body are avoided. By continual usage the pivot pin holes in the shuttle body necessarily become enlarged so that the pin works loosely therein and will gradually work out of the holes so as to interfere with the movement of the shuttle and cut and destroy the reed of the loom. The use of the pin pivot for the spindle also prevents the spindle from being adjusted so that the filling will run freely from the bottom of the spindle. It is to avoid these disadvantages and objectionable features that the present invention is designed, and the same contemplated improved pivoting devices, as well as means for adjusting the spindle so that it can be raised or lowered and still kept in a straight line to the eye of the shuttle, whereas in the event of not being able to adjust the entire spindle or at least both ends equally, the same must necessarily slant to a certain extent and prevent the filling from running freely from the spindle.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a vertical longitudinal sectional view of the loom shuttle constructed in accordance with this invention. Fig. 2 is a detail in perspective of the bearing plate or step and one end of the cop spindle. Figs. 3, 4 and 5 are similar views of modifications. Fig. 6 is a detail sectional view of an additional modification

of the bearing plate or rest. Fig. 7 is a detail plan view of one end of the shuttle and the bearing devices therein.

Referring to the accompanying drawings:— A represents a shuttle body of the ordinary general construction, and provided at one end and in the top thereof with the circular recess B, and the adjacent recessed slot C opening into the open body of the shuttle and said circular recess. Said recessed slot C is designed to receive the angular bearing plate or rest D, which snugly fits in the bottom of said recessed slot and is provided with the upwardly extending arm E, resting against the back wall of said slot, and terminating at its upper end in the enlarged right angularly disposed securing flange F, which, as illustrated in the drawings, is semicircular, so as to snugly fit the circular recess in the top of the shuttle body at one end, and thus securely hold the body of the bearing plate or rest securely within its recess, so that the same is prevented from displacement. Said flange is held firmly in the circular recess by means of the leaf-spring G, resting in the top of the shuttle at one end over said recessed slot and having a circular head G' registering with said circular recess over said flange, and is held in position by means of the securing bolt H, passing through the shuttle and projecting into the nut recess I, in the under side of the shuttle body at the same end and accommodating a nut J engaging the end of the bolt within the nut recess. The said bearing plate or rest D, is provided on its upper face near the longer shuttle body slot with the bearing recess K, which is designed to pivotally support and form a bearing for one end of the cop spindle L. The said cop spindle L is of the ordinary shape and terminates at one end in the right angularly disposed flat head M, which is provided with the off-standing tongue or heel N, which takes into the bearing recess K, on said bearing plate or rest and is held firmly in position therein, by the spring G bearing upon the upper end of said head, and thus providing a pivotal attachment for the spindle within the shuttle body, which allows the same to be moved in and out of the shuttle eye freely, while at the same time avoiding the many disadvantages of having the pivot pin work-

ing in the wooden body of the shuttle. The flat head M of the cop spindle projects below one end of the bearing plate or rest, and is designed to strike the locking pin O, mounted to slide in the body of the shuttle, and when said spindle is in its horizontal position within the shuttle the pin is designed to be forced into the nut recess I, and against one side of the nut J, within said recess, so as to prevent the same from turning as will be readily apparent.

In order to provide for the free running of the filling from the spindle it may be necessary to adjust the spindle within the shuttle, and in order to accomplish this, I employ an adjusting screw P, engaging a threaded perforation *p*, in the body of the bearing plate or rest D. The said adjusting screw is provided in the top thereof with a slot *p'*, by means of which the same may be adjusted and terminates below the bearing plate or rest in a thin flattened head Q, which head rests upon the bottom of the slot C and is of the same width as the plate itself, so that the head prevents the screw from coming loose when the plate or rest is in position. By taking out the bearing plate or rest, the adjusting screw can be set as desired to either raise or lower the entire spindle within the shuttle. The shuttle spring bears down on the spindle head and the bearing plate flange securely holds the same in any position in which it may be set, and effectually prevents the spindle from ever becoming displaced from its bearing, while at the same time the adjustment provides for adjusting the spindle straight up and down so that one end thereof will not be higher than the other in the shuttle.

In Figs. 3 and 4 of the drawings, it will be seen that instead of constructing the bearing plate or rest, with the bearing recess K, the same may be provided with the opposite perforated lugs R, between which the spindle end having the pivot pins R' may be pivoted, or instead of having the said lugs perforated the same may be provided with the bearing notches R², within which may be seated the pivot pins R' of the spindle head, so that the spindle may be pivoted upon the bearing plate or rest in a substantial and equivalent manner to that already described, and still avoid the many disadvantages of having the spindles pivoted in the wooden body of the shuttle.

A further modification is illustrated in Fig. 5 of the drawings in which the tongue or heel N, of the spindle is provided with a bearing recess S, which takes over the bearing lug T, projecting from the base and one end of the bearing plate or rest, which construction is merely a reversal of the construction described, and illustrated in Figs. 1 and 2, and attains the same ends.

It will be readily seen from the foregoing that the various modification illustrated and

described all subserve the same general principle of pivotally securing the spindle within the shuttle upon an adjustable bearing plate or rest to accomplish the object set forth.

Various modifications similar to those described will readily suggest themselves to those skilled in the art.

A preferable modification of the bearing plate or rest D is illustrated in Fig. 6 of the drawings. In this figure the main portion or step of the bearing plate or rest is provided in the rear end thereof with a threaded socket *d*, which adjustably receives the screw pin *e*, projecting from the flanged arm E of said plate or rest. It will be readily seen by this construction, that the said bearing plate or rest can be readily lengthened or shortened as desired, and that by having the same sectional, the step portion when worn out can be readily replaced without losing the entire plate, and further that by shortening the length of said plate or rest, the spindle will be raised, and vice versa, lowered by lengthening the plate or rest.

My allowed application for a loom shuttle, Serial No. 417,717, embodies the nut lock device herein described, and in connection with which the improvements claimed are designed to be used.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a loom shuttle, the shuttle body having a circular recess at one end, and in the top and a recessed slot leading therefrom a bearing plate or rest mounted in said recessed slot and having a right angularly disposed securing flange registering with and seated in the top circular recess, the cop spindle pivotally mounted upon said plate or rest, and a spring bearing upon said plate and one end of said spindle, substantially as set forth.

2. In a loom shuttle, the shuttle body having an enlarged top recess at one end, and a slot leading from said recess, a bearing plate or rest adjustably seated in said slot, and having an enlarged securing end flange adapted to register with said enlarged top recess, the spindle terminating at one end in a head having a projecting heel bearing upon said plate, and a spring bearing upon said head, substantially as set forth.

3. In a loom shuttle, the shuttle body having a recess at one end, a bearing plate or rest adjustably seated in said recess and provided with a bearing recess, the spindle terminating at one end in a head having a projecting tongue or heel bearing in said bearing recess, and a spring bearing upon said plate and the upper end of said spindle head, substantially as set forth.

4. In a loom shuttle, the shuttle body having a recess at one end, a bearing plate or rest seated in said recess and provided with a perforation, an adjusting screw engaging said perforation and terminating in an en-

larged flattened head below said bearing plate or rest and adapted to rest upon the bottom of said recess, and a spring pressed spindle having one end thereof pivotally mounted
5 upon said plate, substantially as set forth.

10 5. In a loom shuttle, the shuttle body having a circular recess and an adjacent recessed slot, an angular bearing plate or rest having an upwardly extending arm resting against the back wall of said recessed slot and terminating at its upper end in a securing flange fitting said circular recess, and a bearing recess, the spindle terminating at one end in a head having a projecting tongue or heel bearing
15 in said bearing recess, and a leaf spring having one end thereof pressing upon the spindle head and provided with a circular head clamped over the flange of said bearing

plate or rest within said circular recess, substantially as set forth. 20

6. In a loom shuttle, the shuttle body having a top recess at one end, a longitudinally adjustable sectional bearing plate or rest mounted in one end of said body and having a securing flange seated in said top recess, a
25 spring pressed spindle having one end thereof pivotally mounted upon said plate or rest, and means for clamping the flange in said recess, substantially as set forth.

In testimony that I claim the foregoing as
30 my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED ISHERWOOD.

Witnesses:

JOSEPH LEWIN,
JAMES REED.