

No. 849,967.

PATENTED APR. 9, 1907.

J. F. BLUMER-KUNZ.  
SHUTTLE CHECK FOR POWER LOOMS.

APPLICATION FILED SEPT. 19, 1904.

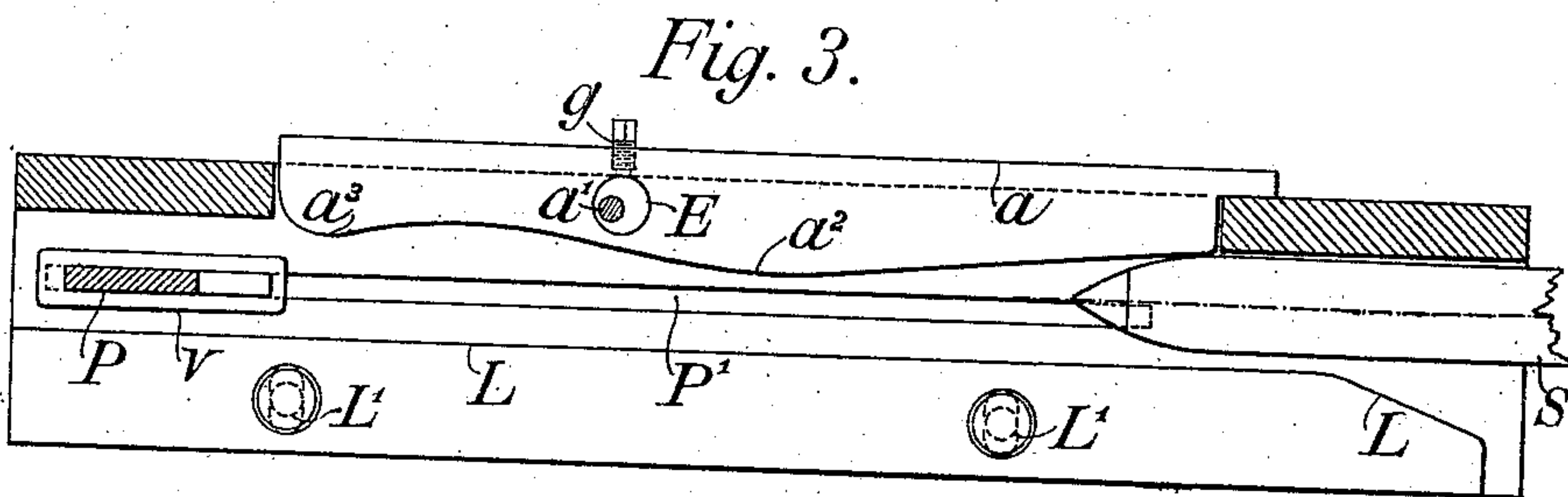
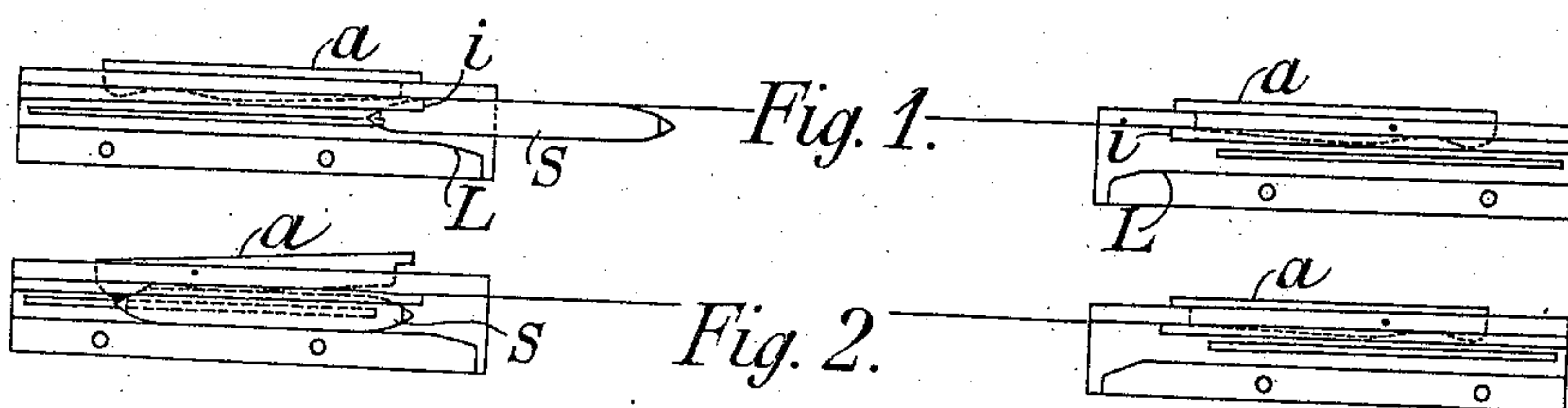


Fig. 6<sup>a</sup>

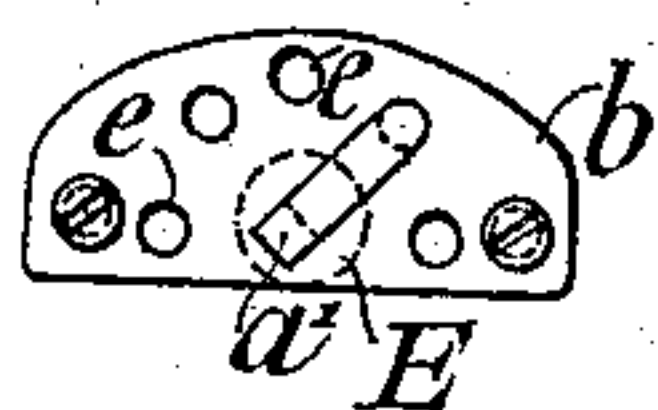


Fig. 6.

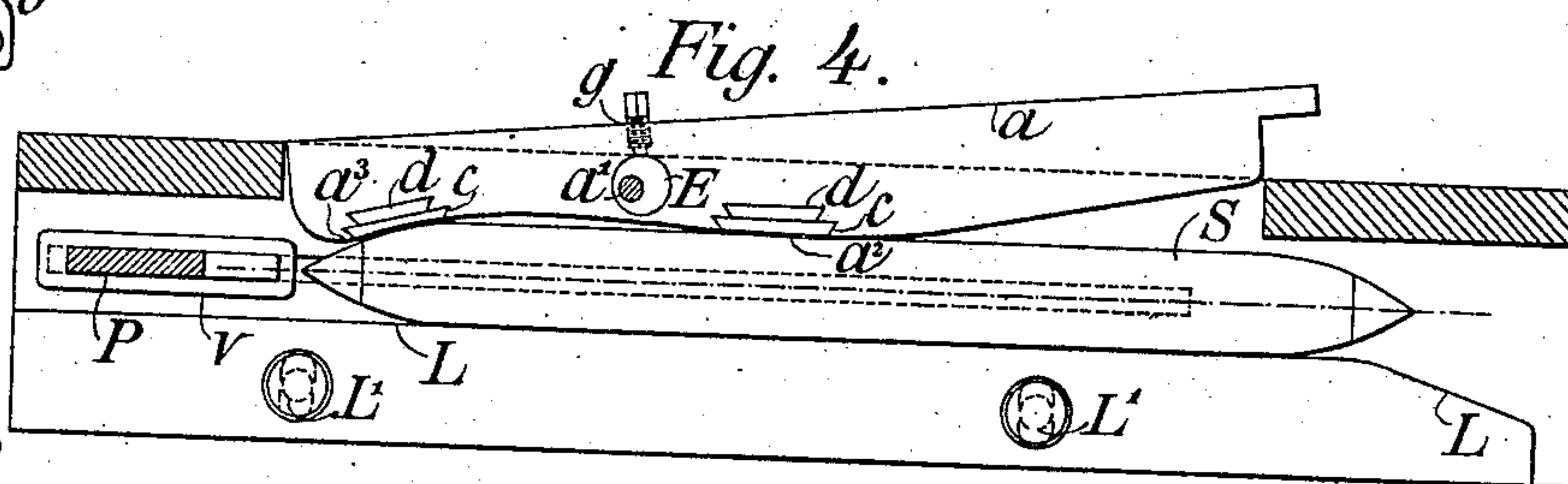
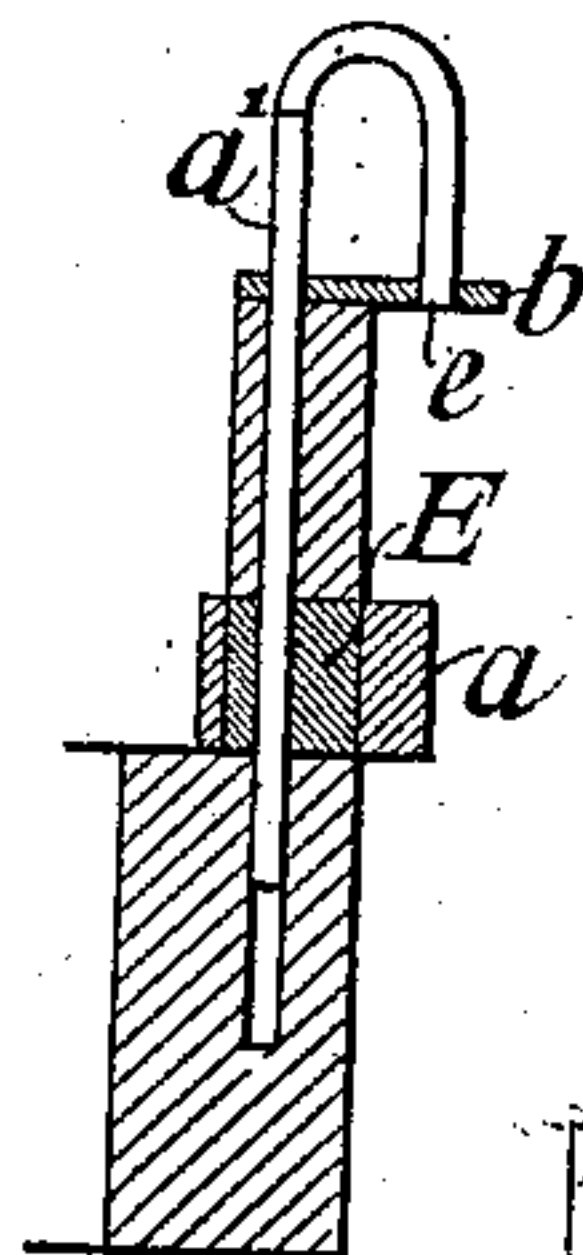
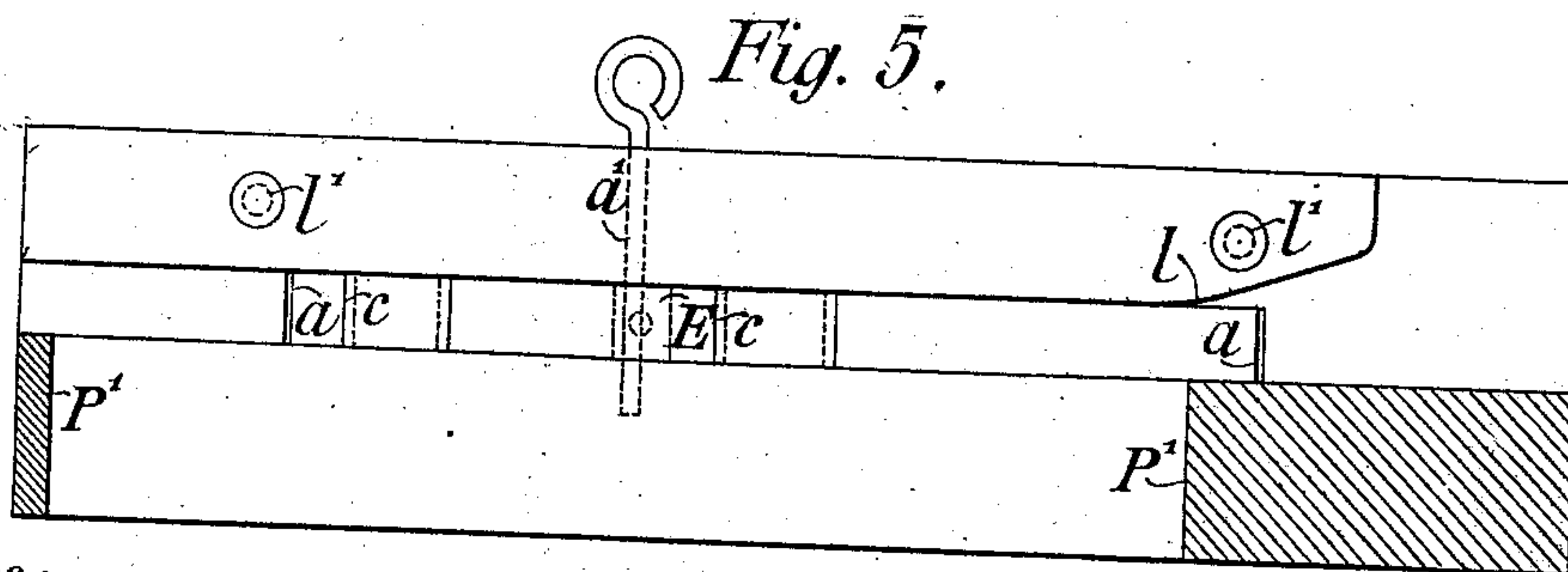


Fig. 5.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JEAN FRITZ BLUMER-KUNZ, OF ENGI, SWITZERLAND.

## SHUTTLE-CHECK FOR POWER-LOOMS.

No. 849,967.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed September 19, 1904. Serial No. 225,134.

*To all whom it may concern:*

Be it known that I, JEAN FRITZ BLUMER-KUNZ, a citizen of the Swiss Confederacy, and a resident of Engi, canton of Glarus, Switzerland, have invented an Improved Shuttle-Check for Power-Looms, of which the following is a specification.

This invention has reference to an improved shuttle retaining or stopping device for power-loom; and its object is to obviate certain well-known defects appertaining to such devices hitherto in use.

It is well known that in power-loom when the shuttle has been thrown by one of the whip-levers or picking-sticks it strikes against the opposite one with such force as frequently to rebound, notwithstanding that the shuttle-boxes are provided with devices for retaining the shuttle and preventing such rebounding, the result of which is that the edge of the fabric becomes more or less ruffled or curled. This defect is obviated by my invention, whereby the momentary retention of the shuttle when at the end of its travel in the shuttle-box is insured and the rebounding of said shuttle rendered impossible. Further advantages to be derived from my invention are that the breaking of the weft-thread and consequent stopping of the loom, which is frequently caused by the said rebounding of the shuttle, is obviated; the production will consequently be increased; the fabric will have a better appearance, at least at its edges; the picking-sticks or equivalent shuttle-throwing devices will be less liable to injury by the shuttle, so that their renewal or repair will not so frequently be necessary, and consequently the cost of upkeep of the loom will be reduced.

My improved device possesses the further advantage that it can be readily substituted or fixed in place of the hitherto-used devices without necessitating much adjustment or fitting.

In order that my invention may be readily understood, I have illustrated it in the accompanying drawings, in which—

Figure 1 shows the two shuttle-boxes of a loom having my improved shuttle-retaining device, the shuttle being shown entering the left-hand shuttle-box. Fig. 2 is a similar view, the shuttle being in this instance shown at the end of its travel in the left-hand direction. Fig. 3 shows in horizontal section and on enlarged scale the left-hand shuttle-box

and shuttle as shown in Fig. 1. Fig. 4 is a similar view, but with the shuttle in the position shown in Fig. 2. Fig. 5 is a vertical sectional view of the shuttle-box, the section being centrally through the slot in which the picking-stick operates; and Figs. 6 and 6<sup>a</sup> show one form, as an example only, of a detail.

The shuttle-box is provided with strips or the like L l on the front and back, respectively, to prevent the shuttle jumping out, these being usual in looms. The strips L and l are respectively adjustably secured by screws L' and l'.

The picking-stick P, having a picker v, is guided in a slot P' and serves solely to throw the shuttle from the position shown in Figs. 2 and 4 into the oppositely-arranged shuttle-box.

My improved device for momentarily retaining the shuttle in the shuttle-box, and thus preventing its rebounding, consists of a rocking bar a, which is arranged in the slot P', which bar is mounted on the usual pivot or pin a'; but the latter is in this instance brought nearer to the center of the rocking bar or catch than heretofore, being located at a distance equal to about one-third the length of the rocking bar from the outer or left-hand end thereof. At its lower face the rocking bar a is formed with two swellings a<sup>2</sup> a<sup>3</sup>, one at each side of the pivot a', and one of which is at about the center lengthwise of the bar and the other at its outer end.

The pivot a' and the swellings a<sup>2</sup> a<sup>3</sup> are so arranged and are of such relative dimensions that the shuttle on entering the shuttle-box will cause the bar a to rock sufficiently on the pivot a' to permit the shuttle to pass between the swelling a<sup>2</sup> and the front strip L. In this position the swelling a<sup>3</sup> at the front end of the bar a will be depressed to such an extent toward the strip L as to prevent the passage therebetween of the shuttle, which latter will consequently be stopped and will be held securely between the strip L and the two swellings a<sup>2</sup> a<sup>3</sup> of the bar a. Any movement either of the bar a or of the shuttle is now impossible, except when the latter is again thrown by the relative picking-stick. The retention of the shuttle in the shuttle-box is thus accomplished without the employment of any springs.



The pivots  $a'$  may, if desired, pass direct through an aperture in the bar  $a$ . In order, however, to enable any inaccuracies in the position of the front face of the bar  $a$  relatively to the path of travel of the shuttle, which inaccuracies may be caused by a bad fitting or wearing away of the pivot or a wearing away of the face of the bar itself, to be easily rectified, I may employ a cylindrical block E, eccentrically through which the pivot  $a'$  passes, as shown in Figs. 3, 4, and 5. Said block E is fixed in position in the bar  $a$  by a set-screw  $g$  and moves or rotates with the latter on the pivot  $a'$ .

By adjusting the position of the block E the position of the bar  $a$  relatively to the path of travel of the shuttle will be simultaneously adjusted. An alternative arrangement for attaining this result is shown in Figs. 6 and 6<sup>a</sup>. In this the free end of the spindle  $a'$  is bent into the form of the letter U. The longer limb of said spindle is of square sectional form and passes and is slidable through a similarly-shaped eccentrically-placed aperture in the block E. The shorter limb of said spindle is adapted to be engaged in any one of a series of apertures  $e$  in a plate  $b$ , which latter is fixed to the shuttle-box. It will be seen that in this case the bar  $a$  rotates on the cylindrical block E and that the latter moves together with the spindle  $a'$ . To adjust the bar  $a$  as desired, it is only necessary to disengage the short limb of the spindle from the plate  $b$  and then insert it in the desired aperture  $e$  in said plate, which will cause the block E to be so moved as to cause the bar  $a$  to be moved either, according to the adjustment, in one direction or the other relatively to the path of the shuttle.

In order that the impact of the shuttle against the swellings  $a^2$   $a^3$  on the bar  $a$  shall be as soft as possible, I may provide elastic insets  $d$ —for example, of rubber—at these parts, on which a tough but pliant covering  $c$ —say of leather—is arranged.

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

1. An improved shuttle-retaining device for power-looms, consisting of a shuttle-box having guide-strips between which the shuttle enters, a binding-bar rockably supported on a pivot arranged nearer the outer end of the bar than its inner end, said bar having two convex portions on its face, one at each side of the pivot, and means for adjusting the bar relative to the path of the shuttle in said shuttle-box.

2. An improved shuttle-retaining device for power-looms, consisting of a shuttle-box having guide-strips between which the shuttle enters, a binding-bar rockably supported on a pivot arranged nearer the outer end of the bar than its inner end, said bar having two convex portions on its face, one at each side of the pivot, and means for adjusting the bar relative to the path of the shuttle in said shuttle-box, said means consisting of an adjustable block in which the pivot of the binding-bar is mounted, and an adjusting-screw for said block.

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

JEAN FRITZ BLUMER-KUNZ.

Witnesses:

LEWIS LERAMAND,  
JOSEPH SIMON.