

W. A. Hastings.
Shuttle Guard.

N^o 86,668.

Patented Feb. 9, 1869.

Fig: 1.

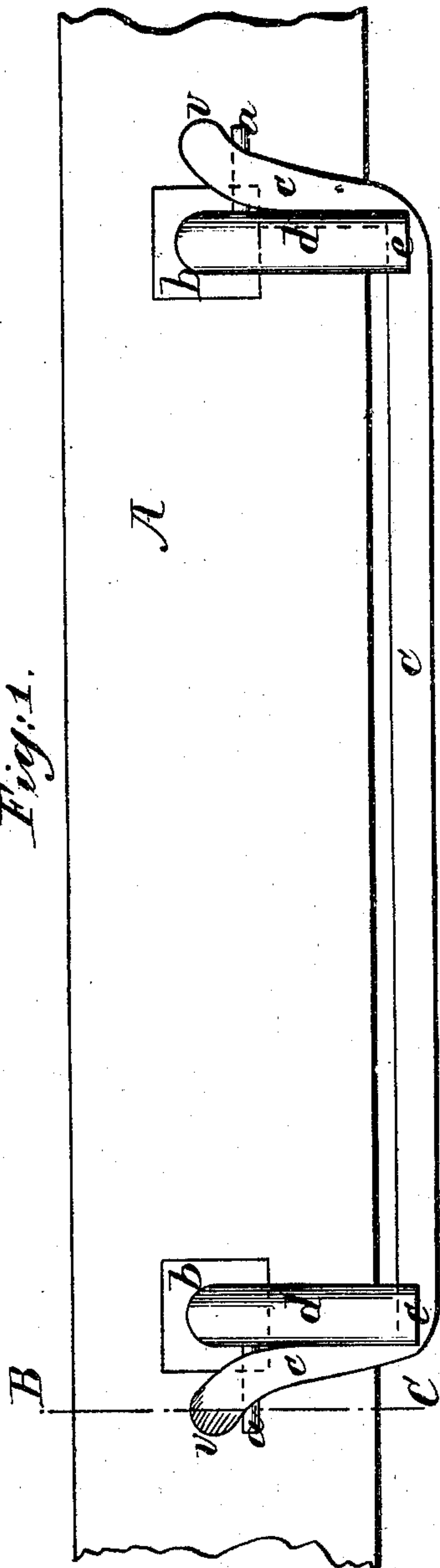


Fig: 2.

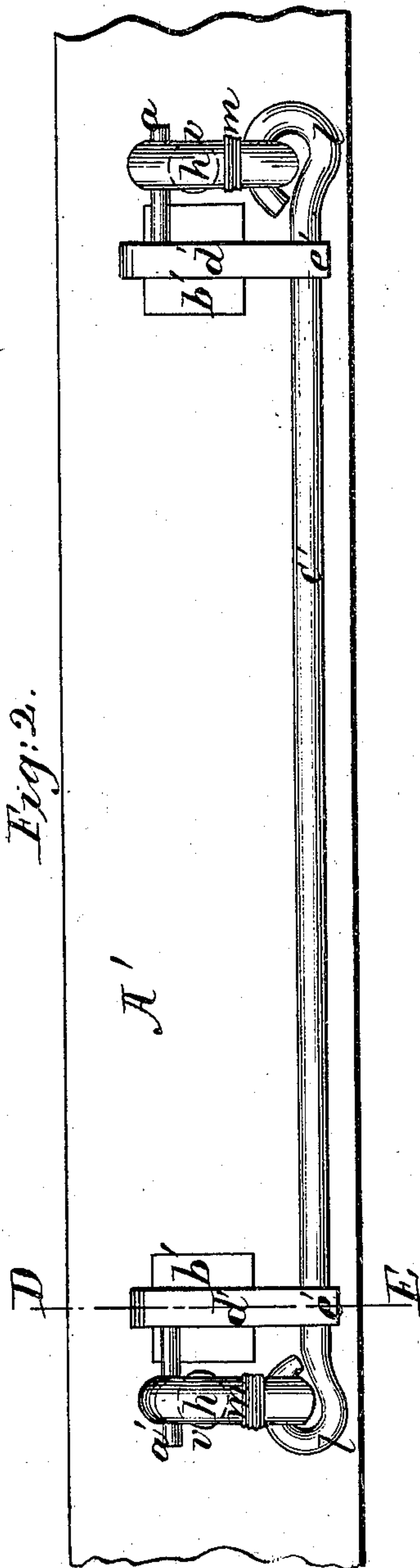


Fig: 4.

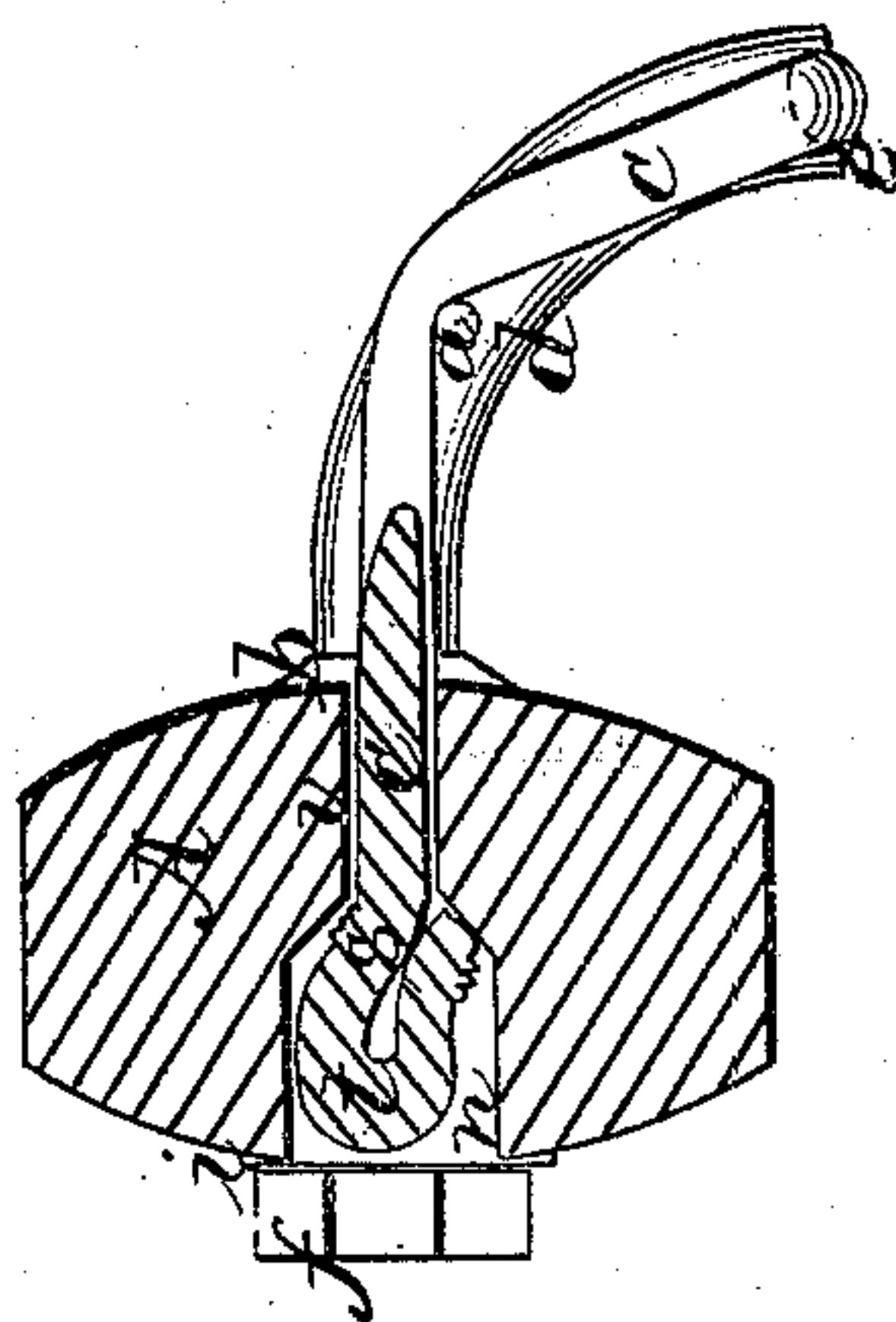
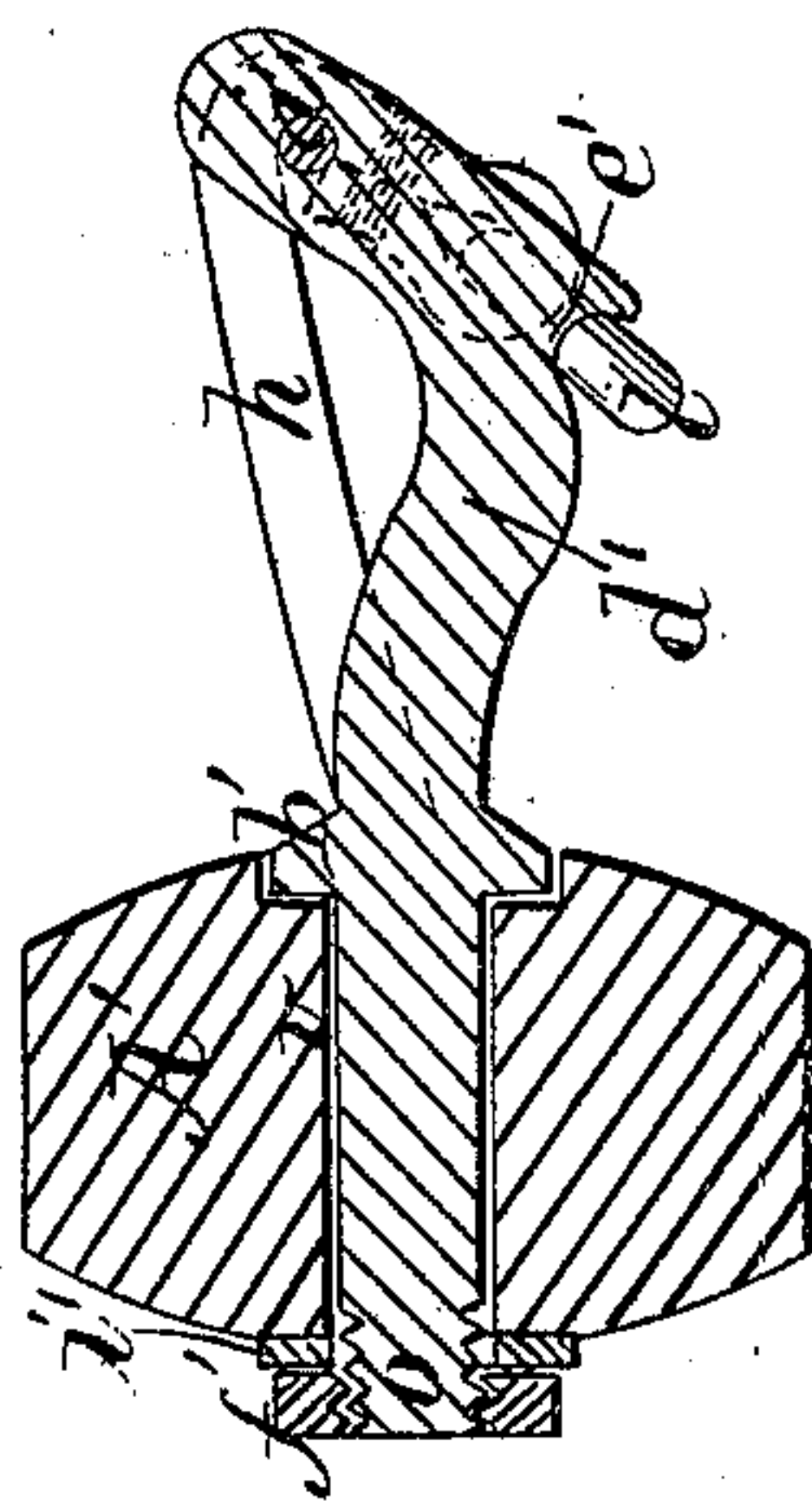


Fig: 3.



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WILLIAM A. HASTINGS, OF PALMER, MASSACHUSETTS.

Letters Patent No. 86,668, dated February 9, 1869.

IMPROVEMENT IN SHUTTLE-GUIDE FOR LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM A. HASTINGS, of Palmer, in the county of Hampden, and State of Massachusetts, have invented a new and useful Improved Shuttle-Guide; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a front view of one modification of my invention;

Figure 2 is a front view of another modification of the same;

Figure 3 is a vertical transverse section through line D E of fig. 2; and

Figure 4 is a vertical transverse section through line B C of fig. 1.

My invention relates to a device for use, in connection with or upon a loom, to prevent the shuttle from doing serious injury when it flies from the loom; and consists in such construction thereof as will enable the operator to adjust broken or loose threads, or do anything about the loom in connection with the shuttle or threads, without the removal of the guide which may at the time be attached to the loom.

It is well known that in weaving, the shuttle often flies out of the loom; and as it is thrown from one end of the loom to the other with great force, when it does so leave the loom, much damage is often done by it, and oftentimes more or less personal injury results therefrom; and to prevent such damage, either to the cloth, machinery, or to the operator, it has been found desirable to place a guide upon the loom, so that when the shuttle does fly out, it may strike the guide, and be either entirely stopped by it, or its course be so changed that it can do no damage.

I obviate all the objections to a rigid or fixed guide by the use of an elastic or flexible guide, which is sufficiently firm to change the direction of the shuttle when thrown from the loom, while it is easily moved to one side in the operation of readjusting broken or displaced threads, without any apparent effort on the part of the operator.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and the mode of its operation.

In the drawings—

A represents the beam or rail of the loom, having a hole at each end, through or into which is inserted the brace *d*, which may be a curved piece of suitable metal, as shown in fig. 4, and having a screw-thread made upon one end, upon which fits and turns the nut *f*, a washer, *i*, being used if desired.

The other end of said brace has a groove or bearing therein, as shown at *e*; and at *b* is a collar or shoulder, which may be of any form desired, but I prefer to make it square; and a small recess is made in the beam A, and the collar *b* set or fitted therein.

By this construction, if the collars or shoulders *b* fit the said recess properly, the brace *d* is kept in its position more firmly, and any lateral movement or turning of said brace in its socket is prevented.

Other holes, one outside of each brace *d* at *v v*, are made in the beam A, each hole *v* being enlarged upon the back side of the beam at *n*.

Any sufficiently-elastic material, as rubber cord, may be cut or made of a proper length, and the ends, being inserted through the holes *v v*, are bent over to form a loop, as shown in fig. 4, and tied securely at *s*. This prevents the cord from pulling through the hole *v*.

It might be found, in practice, that a simple knot would answer the same purpose, or a button attached to each end of the cord might be used.

The braces *d d* have each a projection or pin, *a*, thereon, upon the outside of each brace, toward the end of the beam A, and the said braces *d d*, being secured firmly in place, the elastic cord *c* is inserted in the holes *v v*, and secured as above described, and said cord is placed over and upon the pins or projections *a a*, and is then drawn down and placed in the grooves or bearings *e e*, in the ends of the braces *d d*, when it is ready for use.

Figs. 2 and 3 show another modification of the same invention, wherein the braces *d'* differ somewhat in construction from those in the device already described, although the principle of operation remains the same, the form of the braces *d' d'* being adapted to the use of a metallic rod.

Said braces *d'* are secured to the beam A in precisely the same manner as are those hereinbefore described, and instead of the elastic cord *c*, a metallic rod, *c'*, may be used, said rod *c'* having a loop or eye, *l*, at each end.

A short elastic cord, *h*, is secured to the beam A in the same position and in the same manner as hereinbefore described, and one end of said cord *h* is secured to the eye *l* at one end of the rod *c'*, in the same manner as it is prevented from pulling out of the beam A, or in any other desirable manner, one cord, *h*, being at each end of the rod *c'*.

The cords being secured to the rods *c'* and to the beam A, said cords are placed over and upon the pins *a' a'* in the braces *d' d'*, and the rod *c'* placed in the bearings *e' e'* in the lower part of the braces *d' d'*, and the device is ready for use.

The operation of my invention is as follows:

The device, as above described, being attached to the beam of a loom, if it is desired to adjust broken threads, or to perform any operation where the cord *c* would interfere if it were rigid or fixed, the cord *c* is forced inward, toward the beam A, by the pressure of the hand against it, while the person can proceed with the operation at the same time he forces the cord *c* inward.

The operation of the rod *c'* is precisely similar, except that the rod *c'* being rigid, it is made to slide in-

ward along the lower side of the braces $d' d'$ toward the beam A, while the desired operation is being at the same time performed, and when the pressure is removed, the rod c' is brought back into the bearings $e' e'$ by the elastic force of the cords $h h$.

It is evident that instead of elastic cords, any elastic material may be used, or any arrangement of springs to operate the rod c' , or keep it in its bearings, without departing from the principle of its operation, and, in practice, it might be found desirable to change somewhat the form of the lower side of the brace d' , in order to offer more or less resistance to the rod c' in its movements from its bearings $e' e'$.

In actual operation upon a loom, the distance between the braces would be very much greater than is shown in the drawings, as the rod c' or cord c would be nearly as long as the distance travelled by the shuttle, or as the width of the web of cloth being woven, and the pressure necessary to force either the cord or rod inward would be slight.

The cord c might be stayed to the beam A in one or more places between the braces, if found desirable, to give it greater rigidity, while the rod c' , resting in its bearings $e' e'$, would be perfectly rigid, as regards any outward pressure of the shuttle against it, and at the same time it is free to move inward at any slight pressure of the hand against it, and the elastic force

of the cords $h h$ might be made adjustable by means of a tension-screw attached to the beam A.

In practice, the rod c' might be pivoted to the braces, and the ends of said rods might extend above the pivots, and the elastic cord or springs could be attached to said ends of the rod, and to the beam A, such an arrangement being merely a modification of my invention.

In my device it is only necessary, in case of a "pick-out," to press the rod or cord from its bearings e' or e , and the elasticity of the cord or spring draws the rod or cord c' or c back out of the way of the operator, thus being much more convenient, and saving much time in manipulation.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

A movable elastic shuttle-guide, consisting of a rod or cord, resting in or upon suitable bearings in the braces d or d' , and operated or kept in position by means of an elastic connection, all constructed and operating substantially as and for the purposes herein specified.

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Witnesses:

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