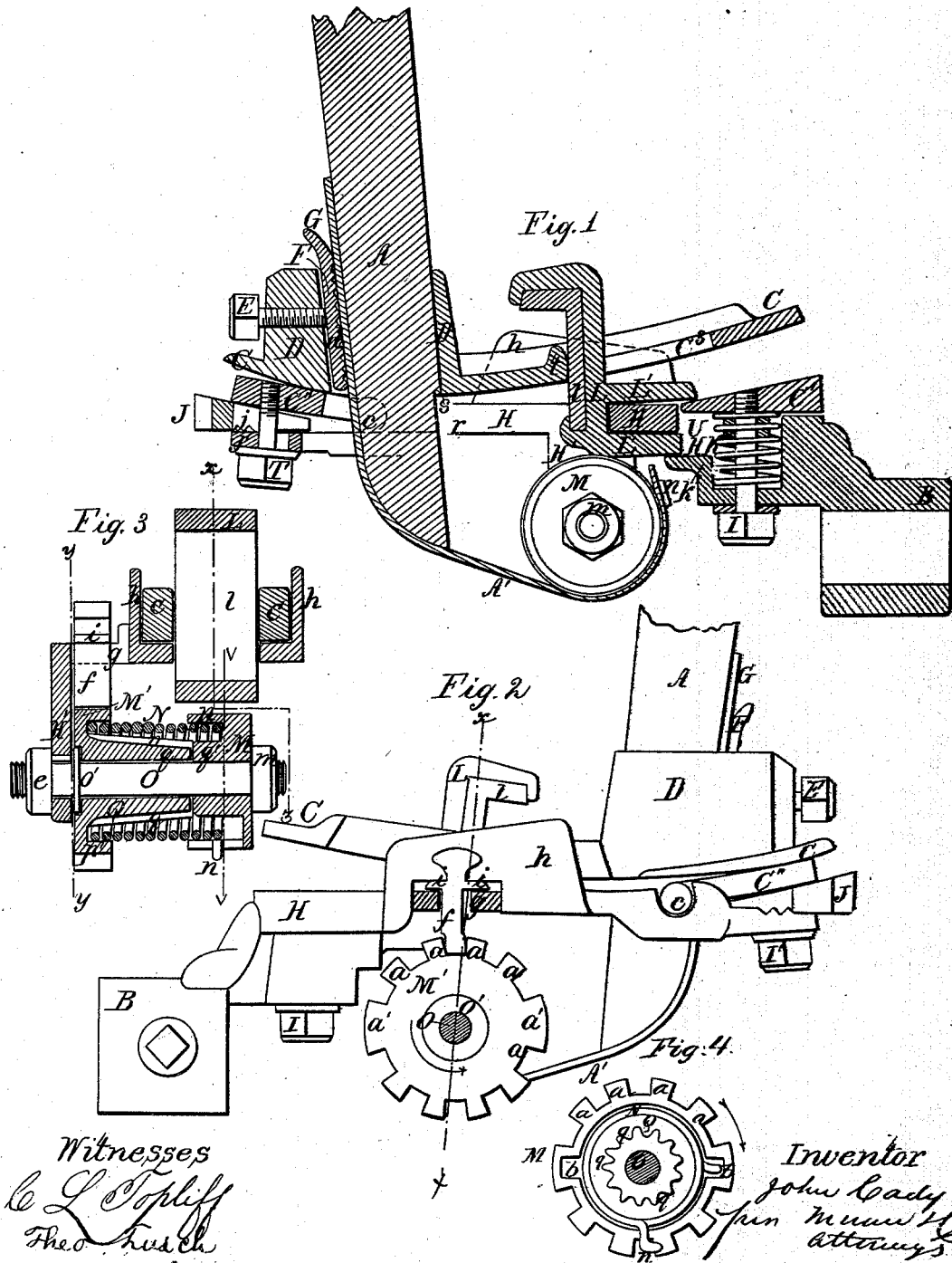


*J. Cady.*  
*Shuffle Motion.*

*N<sup>o</sup> 47,517.*

*Patented May 2, 1865.*



# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PICKER-MOTION FOR LOOMS.

Specification forming part of Letters Patent No. 47,517, dated May 2, 1865.

*To all whom it may concern:*

Be it known that I, JOHN CADY, of Staffordville, in the county of Tolland and State of Connecticut, have invented a new and useful Improvement in Picker-Motions; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my apparatus, a portion being in vertical section taken on the line *z* of Fig. 3. Fig. 2 is an elevation of the opposite side, a portion thereof being shown in vertical section on the line *y* of Fig. 3. Fig. 3 is an elevation of a vertical section taken on the line *x* of Fig. 2. Fig. 4 is a transverse sectional view of the spring-box Q on the sectional line Y of Fig. 3.

Similar letters of reference indicate like parts.

This invention consists in a novel mode of constructing and operating the devices which give motion to the picker-staff.

C is a shoe with a curved face, which rests upon a bed, H. The shoe has a slot, C<sup>3</sup>, near its front end, which receives a stop, L, hereinafter described, and a socket, D, with raised sides at its rear end. The lower edge of the interior of the socket has a flange, *s*, which receives and supports a shoulder formed on the front lower part of the picker-staff A, which is fitted within the socket D, the lower end of the staff projecting below the shoe C, and passing through a slot, *r*, in the bed H, to a point a little distance below the bed H.

A' is a strap fastened on the hooked end *n* of a spring, hereinafter described, and passing beneath the staff A, and upward along its back side to a point above the socket D, and the strap is secured in the said socket by means of a corrugated key, F, which is fitted in said socket and pressed against said strap by a screw, E, which passes through the back and thicker portion of the walls of the socket, and presses the corrugations *d* against the strap so as to hold it against the staff, and the pressure of the screw also clamps the staff in the socket. The bed H carries a socket, B, at its front end, which receives a rod projecting from the lay, and by this means the

the said bed and its appurtenances are connected to and carried by the lay in the manner common in looms. The upper surface of the bed H is flat, but it is provided with inclined planes C' C'' at its ends, which planes are so fitted to the bed as to be adjustable at varying inclinations in manner as follows: The inclined plane C' at the right-hand end is made wedge-shaped, its thickest end pointing outward, and on its under side it carries a collar, U, which has a screw-thread tapped in it, the screw-thread extending also through the inclined plane.

K' is a socket made in the bed H, which receives a strong spiral spring, K, which fits about the collar U and bears against the lower side of the inclined plane, the lower side of the spring resting upon the bottom of the socket K', said bottom being also perforated with a screw-threaded hole to receive a screw-bolt, I, which extends up through the spring and into the said collar. A washer is interposed between the head of the bolt and the under side of the bed H. The operation of the spring is to elevate the inclined plane and to furnish a yielding surface to the shoe C when in its vibrations it rises or rocks upon the plane. The screw I enables me to adjust the tension of the spring and to limit the distance above the bed H to which the inclined plane C' can be raised by the resiliency of the spring. The inclined plane C'' at the other end of the bed H is also wedge-shaped, but not at so great an angle as the inclined plane C', and it is made to conform to the slots in the shoe C and bed H, which receive the picker-staff, its sides extending forward on each side of said picker-staff and having gudgeons formed thereon, which rest in bearings made for them in the outer edges of said bed H. The inclined plane C'' is raised to the required angle by means of a wedge, J, inserted between it and the bed H, the latter being corrugated, as at *j'*, to articulate with the corrugated under surface, *j*, of said wedge, so as to prevent the slipping of the wedge. The wedge is also secured by a clamping-screw, T, which passes through the bed H from beneath, through the wedge, and into a screw-tapped hole in the inclined plane C'', the latter being also held stationary by said screw. The slot *r* in the

bed H extends from the place of the inclined plane C' to a line above the axis O of the spring-box, hereinafter described.

L is a stop whose office is to limit the vertical movement of the shoe C. It has in front two parallel fingers, which are fitted to slip over and embrace the bed H at the inner end of its slot *r*, the said stop being maintained in place by that means. The inner upright face of the stop is so formed as to be capable of receiving and holding a wooden bed, *t*, of elbow shape, as seen in the drawings, which receives the blow of the lip *t* of the shoe. The upper part of the stop L projects through and above the shoe C, its top projecting over the lip *t* of the shoe, as seen in Figs. 1 and 2.

H' is a hanging bracket which depends from one of the sides of the bed H, and which furnishes a bearing for one end of the axis O of the box Q. The axis O is formed with a collar or ring, O', which is received in a countersink made in the head M' of the box. The axis is first passed through the box and secured thereto by a nut, *m*, and afterwards its other end is passed through the bearing H' and secured thereto by a nut, *e*. Before the box is connected to the bearing, it is fitted with a spiral spring, N, in the following manner: The box Q is made in two parts, *q* and *q'*, which come together with a plain joint, as seen in Fig. 3. The part *q* is the shortest and has a head, M, formed upon it, from the periphery of which a circular flange, *p*, projects inwardly, so as to form a circular recess for the reception of one end of the spiral spring. A narrow, longitudinal slot is cut through the flange *p*, to permit a hook, *n*, formed on the extremity of the wire of which the spring is made, to project through it so as to furnish the means of attaching the strap A' to the said box. The part *q* of the box has a similar flange, lettered *p'*, covering a similar recess, to receive the opposite end of the spring, but the flange *p'* is of greater diameter and is notched, as at *a*, to receive a locking-key, *f*, which, when the box is in place, is passed down through a slot, *g*, made in the bed H, outside of one of the guiding-pieces *h*, and fits in any of the said notches. The notches *a*, at two opposite points, are farther apart than at other points on the flange, so that they leave two sprockets, *a' a'*, of greater width than the others, the object being to enable me to make sockets *b b* on the inner face of said sprockets, such sockets being of equal depth with the adjacent recess, so that the other bent extremity of the wire spring may be held and locked in either of the recesses *b*. The part *q* moreover is corrugated longitudinally from the end beneath its flange to the joint, where it meets the part *q'*, and its diameter is diminished gradually in the same direction, so that any oil applied to it will run down the grooves of its corrugations to the joint between the parts *q q'*, and so reach the axis O

and lubricate it. The slot *g*, which receives the pin or key *f*, is made long enough to permit the attendant to lubricate the box without removing the key, as seen in Fig. 3. The key has shoulders *i* on each side, by which it is held up by the bed H on the edges of the slot *g*.

The advantages and the mode of operation of my invention will be perceived by those familiar with looms, and they, therefore, need not be fully detailed. When the box Q is in place and the picker strap is attached thereto, the force of the spring N will restore the picker-staff to its normal position after each of its vibrations in the lay. If the spring becomes relaxed its tension can be increased by withdrawing the key *f* and turning the part *q* of the box and inserting the key in an advanced notch. The picker-staff is rigidly held in the socket D of the shoe C, and the strap A' is held to the strap by one and the same device, and without nailing or bolting them to each other, and therefore they can be taken apart and again attached without difficulty. The bottom of the shoe C is made convex, as shown, and instead of rocking on a flat bed it rocks on a bed which is curved or inclined at its opposite ends by means of the adjustable inclined planes C' C''. The object of this part of my invention is to preserve the parallelism of the staff in its vibrations, so that it may deliver its blow squarely when it moves toward the shuttle, and so that on its return it shall strike the end of the lay or any intervening material therein squarely. The guides *h* keep the shoe straight upon the bed H, and thus prevent the picker-staff from wobbling and thereby delivering an uncertain or angular blow.

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

1. The stop L, constructed and fastened to the bed H, in the manner substantially as above shown.
2. Making the bed H of a concave form by means of adjustable ends or inclined planes, substantially as described.
3. The mode, substantially as above described, of attaching the picker-staff and its strap to each other and to the shoe C.
4. Forming longitudinal grooves *o*, inclining in the direction shown on the periphery of the part *q* of the box Q, for the purpose of lubricating its axis, substantially as shown.
5. The notched flange M' of the part *q* of the box, in combination with the key *f*, substantially as above described.
6. Arranging the slot *g* in the bed H, which receives the key *f*, so that the box and its axis can be lubricated from above the said bed, substantially as described.

JOHN CADY.

Witnesses:

J. HENRY HILL.  
H. L. FULLER.