J. Welsh.

Shuttle Check.

No. 14,225. Patented Jan. 9, 1855.

Fig: 1.

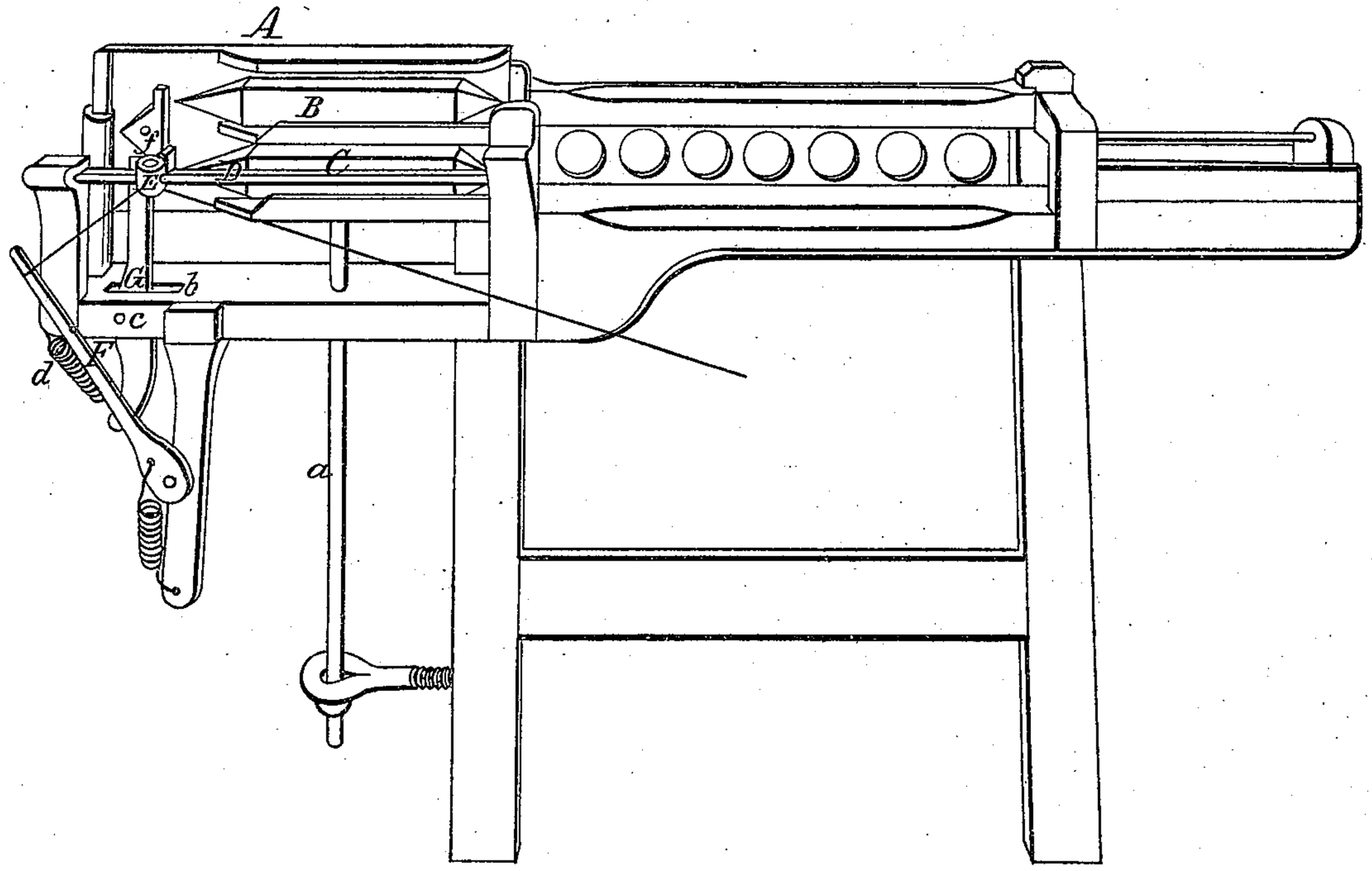
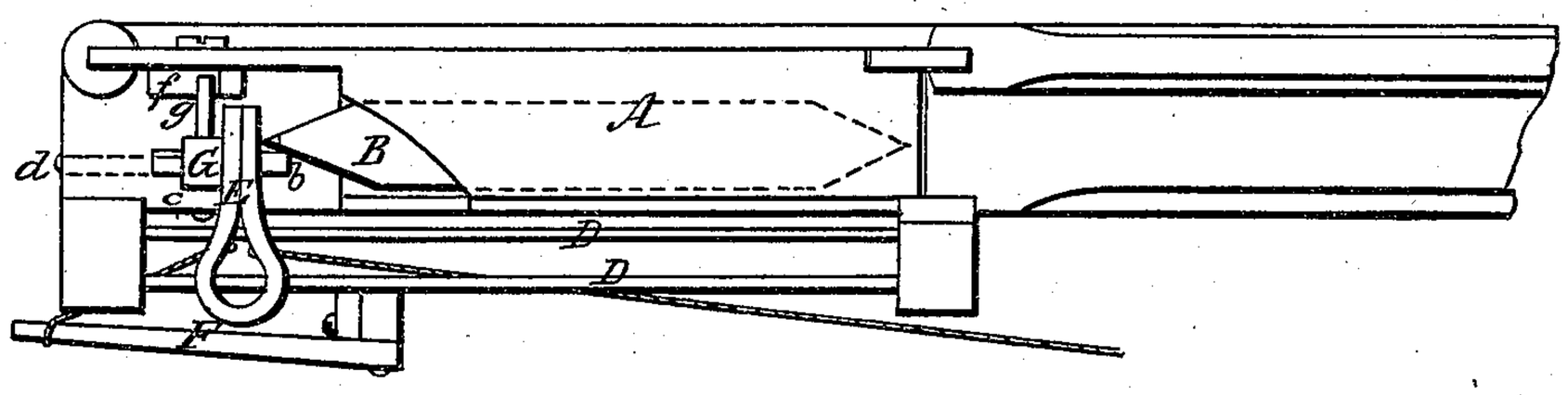


Fig: 2.



Witnesses.

Ben: Morison

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UNITED STATES PATENT OFFICE.

JOSEPH WELSH, OF PHILADELPHIA, PENNSYLVANIA.

LOOM.

Specification of Letters Patent No. 12,225, dated January 9, 1855.

To all whom it may concern:

Be it known that I, JOSEPH WELSH, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Looms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the lay of a loom, with the improvement applied; and Fig. 2, a sectional plan view of the same—like letters indicating like parts when on both figures.

The nature of my invention consists in the application to the lay of those looms requiring or having a moving shuttle box, a periodically moving lever, constructed and combined so that it shall act as an elastic picker stopper, and then move at its upper end so as to allow the picker to follow in contact therewith, and so, be entirely relieved from contact with the point of the shuttle immediately on the rising or falling of the shuttle box.

As my invention relates particularly only to the operation of the shuttles and picker, a representation of the combination of the lay, shuttle box and picker, with the invention and shuttles is all that is required in the drawings.

A is the moving shuttle box, as usually applied to the lay; and is shown in the drawings as adapted for two shuttles (B and C.)—It is made so as to slide up and down in the usual manner, being connected with a cam, by means of the rod (*a*).

D, D, are the spindles, or guide rods upon which the picker (E) is caused to vibrate by means of the usual picker staff and cords in connection therewith and with the usual spring lever (F).

G is a lever which is placed within a mortise (C) in the lower bail of the lay, so as to be capable of being oscillated upon its fulcrum (*c*,) by the alternate action of a spiral spring (*d*) and a small metallic plate (*f*) which is fixed upon the inner side of the shuttle box so as to form two inclined planes, meeting in a point, with a stop at their base, as shown in the drawings; and placed so that both planes may alternately be borne against by the spring lever (G) through the medium of the small stud or pin (*g*) which is fixed in and projects perpendicularly from the upper end of said lever, across the planes of the block (*f*) so as to slide upon the said planes as the shuttle box is moved up and down; and so that the picker (E) may be caused to bear against the upper edge or face of this lever (G) from the positive action of its spring lever (F)—and also so that when the picker (E) is struck by the returning shuttle, it may, with the said lever (G) yield back slightly, and immediately afterward, on the rising or falling motion of the shuttle box (A), be moved by the action, and to the end of one of the inclined planes of the block (*f*) which is fixed to the moving shuttle box and in contact with the projecting pin (*g*) as before described, and then return upon the other plane, to receive the blow upon the picker from the next returning shuttle—as shown in the drawing.

The object of the stop at the base of each plane, is to arrest the motion of the lever (G) at the proper place, and prevent its escape from contact with the block.

The operation of my invention will now readily be perceived.

During the operation of a loom to which it is attached, the returning shuttle striking the picker (E) which being in contact with the upper end or face of the spring lever (G) causes it to yield slightly (thus deadening or easing the blow of the shuttle and preserving the picker from rapid wear) when the lever, instantly recovering its position, the shuttle box commences to move, and one of the planes of the block (*f*) thereon, being in contact with the projecting pin (*g*) the upper end of the lever (G) is necessarily forced along the plane, and the picker following in contact therewith under the action of its spring, is necessarily also separated from the point of the arrested shuttle, which is thus allowed to be moved by the box, freely, up or down, as the case may be, and the other shuttle brought in proper position before the picker as the upper end of the spring lever (G) returns upon the other plane, and is arrested by the stop. When more than two shuttles are used, the number of the inclined plane blocks are to be correspondingly increased, one block being placed vertically over the other, so as to produce a succession of oscillations in the lever (G)—and as a variation of the mode of actuating the lever (G), I contemplate causing it, with its spring, to move up and

down through a mortise in the lower ball of the lay, near the end of the box, and to receive its oscillatory motion by means of like or similar planes, fixed immovably upon the lever (G) or upon the ball or other suitable part of the lay, as may be found most suitable.

It will be apparent also that the principle of the present invention can be applied in several other ways—as it consists in making the picker the intermediate stopper of the shuttle, while being supported during the blow of the shuttle by a momentarily yielding device which afterward recedes sufficiently to allow the picker to become released from contact with the point of either shuttle, allowing its subsequent free motion, up or down, with the containing box. On the 3rd of October last, Letters Patent were granted to me for a certain improvement on looms of this character, consisting of a periodically moving shuttle stopper, acting so as to receive directly the blow of the shuttle, thus relieving the picker entirely, which invention, though effecting the purpose admirably, is objected to by some loom makers, on the ground of greater cost in construction and application, in comparison with the cost of the present invention.

It will be perceived that the present invention is much more simple and inexpensive in construction than my former one. I can construct and apply it for about one fifth of the cost of my former invention, while it will answer the purpose of preserving the picker from rapid destruction, and also allow equally well the free motion of the shuttles up and down with the box.

Having thus described the construction and operation of my invention, shown its advantages, and also pointed out other modes in which I contemplate its application, I proceed to state that I do not confine my claim to the precise construction and arrangement of the lever (G) as shown; nor to the precise mode shown of causing it to produce the effect described, but

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

In looms requiring or having a moving shuttle box, is, in combination with the lay, the lever (*g*) and cam (*f*) when arranged, substantially in the manner described, so that in every change of the shuttle box, the picker shall be released from contact with the shuttle by a positive motion.

JOSEPH WELSH.

Witnesses:

BENJAMIN MORISON,

STEPHEN H. SIMMONS.