E. Hall

Stop for Loom.

No. 7,665. Patented Sept. 24, 1850.

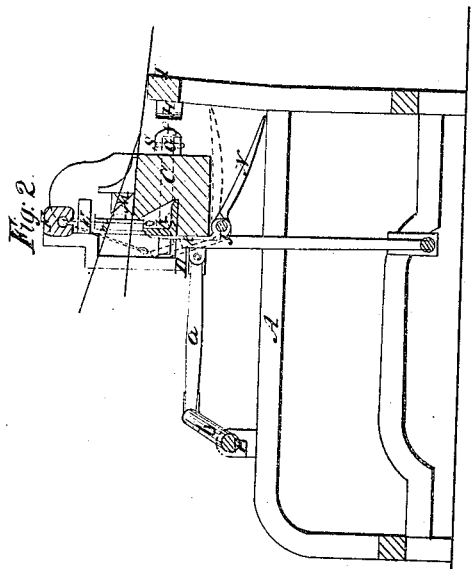

Fig. 2.

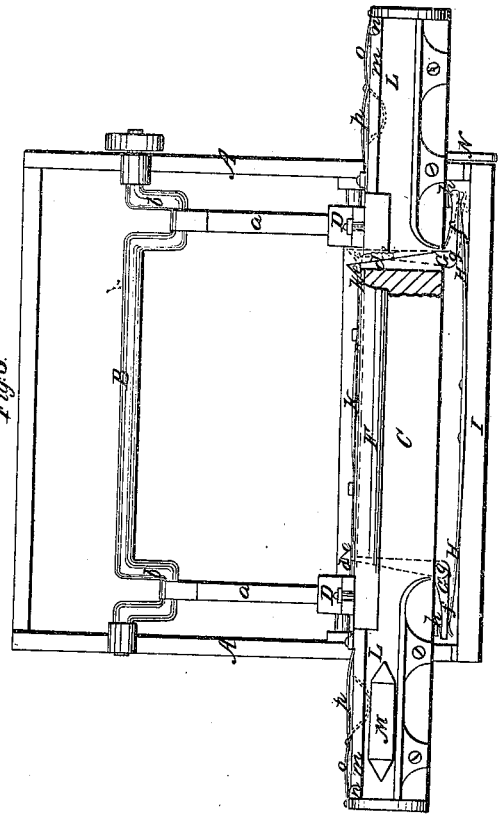

Fig. 3.

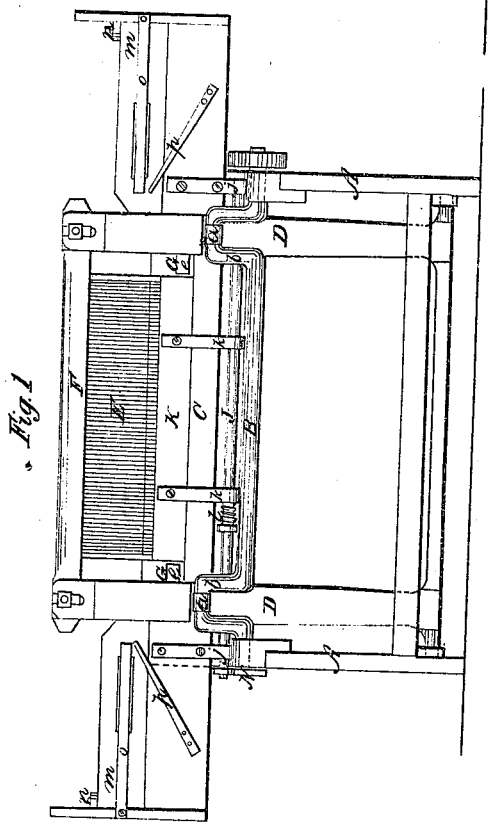

Fig. 1.

UNITED STATES PATENT OFFICE.

ELIJAH HALL, OF CABOTVILLE, MASSACHUSETTS.

STOP-MOTION OF LOOMS.

Specification of Letters Patent No. 7,665, dated September 24, 1850.

To all whom it may concern:

Be it known that I, ELIJAH HALL, of Cabotville, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Lathes for Power-Looms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of a power loom showing the back of the lathe. Fig. 2 is a transverse section of the same taken through the center at right angles to Fig. 1. Fig. 3 is a plan or bird's eye view of the same.

Similar letters of reference indicate corresponding parts in each of the several figures.

The nature of my invention consists in allowing the lower end of the reed to hang free until the lathe arrives within a short distance of putting in the filling, when it is securely held in a position for filling by means of a movable bar passing across the back of it and attached by arms or brackets to a shaft working in bearings attached to the under side of the lathe, the said movable bar being fixed by two snecks on the ends of two arms of levers passing through the lathe and working on centers attached to the front of the lathe, being operated by coming in contact with a spring attached to the breast beam of the loom; the reed is so hung that in consequence of any obstruction in throwing the shuttle it will be freed entirely from the movable bar as the lathe moves forward.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, represents the frame of the loom.

B, is the driving shaft which receives motion in the usual manner.

C, is the lathe vibrating in the usual manner on swords D, D, which are connected by arms *a*, *a*, to the cranks *b*, *b*, on the driving shaft B.

E, is the reed.

F, is the cap which is attached to the upper ends of the swords by bolts passing through it and through slots in the ends of the swords and secured by nuts.

The reed E, is hung in the cap F, so that its lower end is free and can be swung back.

G, G, are levers working on centers *g*, *g*, attached to the front of the lathe, and having each two arms at nearly right angles to each other; those *d*, *d*, passing through slots in the lathe and provided with snecks *e*, *e*, at their back ends, and those *f*, *f*, being nearly in a line with the front of the lathe.

h, *h*, are small helical springs placed between the ends of the lever arms *f*, *f*, and the front of the lathe C.

I, is the breast beam of the loom.

H, is a flat spring attached to the breast beam and having its ends opposite the front ends of the lever arms *f*, *f*.

J, is a horizontal shaft mounted in bearings *j j* attached to the lathe.

K, is the movable reed bar the transverse section of which is of the form of a right angle; it is attached to levers or arms, *k*, *k*, mounted on the shaft J and falls into a recess in the back of the lathe C; it supports the back side of the lower end of the reed being kept in its position by a helical spring *l*, on the shaft J, having one end secured to the lathe which will allow it to be thrown back by any obstruction which might take place at the front of the reed before the lathe had reached the point where the filling commences.

L, L, are the shuttle boxes.

M is the shuttle.

The back sides *m*, *m*, of the shuttle boxes are hung on centers *n*, *n*, at the ends of the lathe and are kept in their proper positions by springs *o*, *o*, and *p*, *p*.

N, is a lever at the end of the shaft J.

The operation of my improvement is as follows: Motion being communicated to the loom in the usual manner the lower end of the reed E will hang freely in front of the movable reed bar K, which is only held in its position by the spring *l*, until the lathe in its forward motion arrives within a short distance (say half an inch) of putting in the filling, when the ends of the arms *f*, *f*, of the levers G, G, meet the ends of the spring H, and are thrown back throwing the snecks *e*, *e* on the lever arms *d*, *d*, behind the ends of the movable reed bar K, and firmly holding it until the lathe has reached the end of its forward stroke when the filling is completed and the lathe commences retreating. As soon as the lever arms *f*, *f*, are free of the spring H, the small helical springs *h*, *h*, will throw forward the lever arms *f f* and release the snecks *e*, *e*, from the back of the movable reed bar K. (In Fig. 3 in the accompanying drawing the snecks are represented as in operation a break being made

in the lathe toward the right hand side of the figure to show the lever G, with its arms *d*, *f*, more distinctly; its position when free of the movable reed bar is shown by dotted lines.) If during the forward stroke of the lathe any obstruction is caused by the breaking of threads or other accident, and the shuttle should be arrested while throwing the weft thread, the reed will be thrown back to the position represented by dotted lines (in Fig. 2) until it clears the movable reed bar K which will be caused to resume its original position by means of the spring *l*, the reed being then left swinging entirely free will prevent any damage being done to the web or to the machinery. The back sides *m*, *m*, of the shuttle box will also be thrown back should the shuttle be stopped before having quite left the shuttle box. When it is necessary to replace the reed in its proper position for operation, the lever N must be raised by hand to the position shown in the dotted lines in Fig. 2, and the movable reed bar K thrown back, the reed will then fall into its place. When the hand of the operator is removed from the lever N the spring *l*, will bring the movable reed bar K, to its proper position and the lathe will be ready for resuming its operation.

I am enabled by these improvements owing to the obviation of the danger of accident, to work a loom at an increase of one sixth in the speed thereby taking off one sixth more cloth than by the other looms now in use.

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

The manner herein described of securing the movable reed bar and reed while the filling is being put in and releasing them after the filling is completed by the combination of the levers, G, G, having arms *d*, *f*, and snecks *e*, *e*, and the springs *h*, *h*, and H; the whole being arranged and operated in the manner substantially as herein set forth.

ELIJAH HALL.

Witnesses:
A. T. Morse,
I. Wm. Hill.