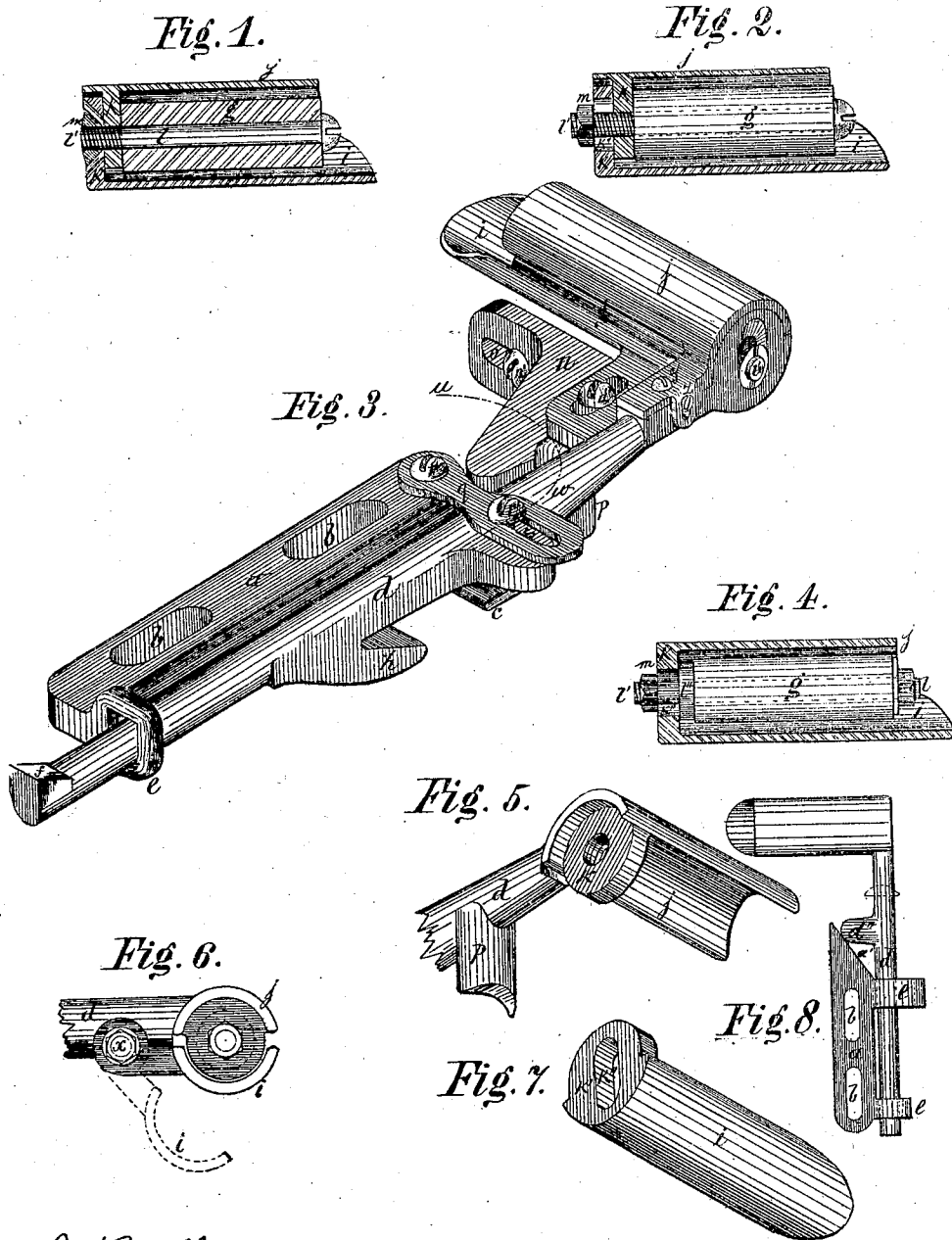


W. H. HOWARD.
 TEMPLE FOR LOOMS.

No. 103,616.

Patented May 31, 1870.



Attest
 Mr. Russell.
 John McKeall Witnesses. W. H. Howard Inventor.

Charles Sidney Whitman Atty

UNITED STATES PATENT OFFICE

WILLIAM H. HOWARD, OF MEDIA, PENNSYLVANIA.

IMPROVEMENT IN TEMPLE FOR LOOM.

Specification forming part of Letters Patent No. 103,616, dated May 31, 1870.

I, WILLIAM H. HOWARD, of Media, in the county of Delaware and State of Pennsylvania, have invented certain Improvements in Loom-Temples, of which the following is a specification:

Nature and Objects of the Invention.

The first part of my invention relates to inclined surfaces on the stem of the temple, which, coming in contact with corresponding inclined surfaces on the supports of the temple, will bring the roller always parallel with the race-board of the loom.

The second part of this invention relates to improvements in the construction of the head of the temple, having for its object the ability to adjust and vary the distance between the lower edge of the roller and the trough for the purpose of allowing different thicknesses of goods to pass through. It is accomplished in three different ways: first, by fastening the stem of the temple, cover, and spindle of the roller rigidly together, and adjusting the trough alone; second, by connecting the stem, cover, and trough rigidly, and making the spindle of the roller alone adjustable; and, thirdly, by fastening the trough and stem together, and making both the cover and roller adjustable.

The third part of my invention relates to improved appliances for producing and controlling the movement of the temple, one consisting of a link, one end of which is jointed to the temple-support, and the other to the stem of the temple. The other appliance, a properly-shaped toe, is fastened to the lay of the loom, and is intended to press the temple gently outward as the lay moves forward to beat up the weft. The same object is accomplished by causing the lay to push the temple during its forward stroke against a stationary inclined plane.

The fourth part of my invention relates to a provision made to guard against breakage in case the shuttle remains in the shed, by providing the link mentioned heretofore with a slot, so as to allow the stem of the temple to recede farther than is necessary in ordinary cases.

Description of the Drawing.

Figure 1 is a section showing the fastening of the cover by means of a countersunk screw-

nut; Fig. 2, a section showing fastening of the cover with an ordinary nut; Fig. 3, a perspective view of the improved temple. Fig. 4 shows trough and cover cast in one piece and roller revolving on collared stud. Fig. 5 shows perspective view of cover cast on stem without trough; Fig. 6, adjustment of trough by fulcrum-screw. Fig. 7 is a perspective view of trough as used for Fig. 5; and Fig. 8, a plan of a device for producing the lateral motion of the temple.

Construction and Operation.

a, Figs. 3 and 8, is the frame of the temple, which, by means of screws passing through the slots *b b*, is fastened to the breast-beam of the loom.

A lug, *c*, projects from said frame *a*, for the purpose of supporting the sliding stem *d*. This stem slides through an ear, *e*, on the frame *a*, and is furnished with an incline, *f*, which, when the temple is pushed forward, meets a corresponding inclined surface in the interior of the lug or ear *e*, and thus brings the axis of the roller *g* of the temple always parallel with the race-board of the lay. The same object is accomplished by the inclined jaw *h* meeting the lug *c* when the temple terminates its forward stroke. That end of the stem of the temple which extends toward the lay of the loom carries on its extremity the roller *g*, with its trough *i* and cover *j*.

In order to allow different thicknesses of cloth to pass between the roller *g* and trough *i*, the relative distance between the two may be made variable by making either the roller and cover, the roller alone, or the trough alone, adjustable.

In Figs. 1, 2, and 3 the roller and cover, in Fig. 4 the roller, are made adjustable. In the arrangement shown in Figs. 1, 2, and 3 the trough is cast in one piece with the stem *d*, or permanently fastened thereto by well-known means, and the cover and roller, after being properly set, are fastened and held by screws *y* and *z*, or either alone.

In Fig. 4, both the trough and cover are cast in one piece or fastened together, and the spindle *l* of the roller *g* is made adjustable in a vertical direction between the trough and cover, the plate *k* being for that purpose provided with a slot, *l''*, and the spindle *l*, so that

the spindle *l* may be fastened rigidly anywhere within the limits of the slot *k''* by means of the nut *m* when the proper position of the roller has been found.

Fig. 5 shows the cover *j* and stem *d* cast in one piece, or they may otherwise be fastened together, as before mentioned, the spindle *l* of the roller *g* being fastened permanently in the flange *k*, similar to the manner shown in Figs. 1 and 2, leaving the threaded shank *l'* of the spindle *l* project from the flange *k* sufficiently to enter the slot *k''* in the flange *k'* on the trough *i*, Fig. 7, and to allow the nut *n* to be screwed on the outside to hold the flange *k'*, Fig. 7, against the flange *k*, Fig. 6. The slot in the flange *k'* allows the trough *i*, Fig. 7, to be moved toward or from the roller *g*, which is intended to run underneath the cover *j*, Fig. 5.

In Fig. 6, the trough may be adjusted by loosening the screw *x*, allowing the trough to swing around it as a center, as shown by dotted lines, and, when the trough is in proper position, to fasten it again.

The motion of the temple is produced by an inclined plane, *n*, fastened to the front side of the lay by means of screws *n'* passing through slots *o*. This inclined plane presses against the lug *p*, which is fastened to the stem *d* by screws *d'*, or is cast on it, as in Fig. 5.

As the lay moves forward to beat up the weft, and the incline *n* pushes against the side of the lug *p*, the cloth is gently stretched until the lay itself strikes the lug squarely, and, in conjunction with the link *q*, brings the threads of the warp exactly opposite their respective spaces in the reed of the loom.

The link *q* oscillates around the screw *r* as a center, and is connected to the stem *d* by another screw, *r'*, passing through the slot *s*.

It will be seen that the link *q* controls the motion of the temple in such a manner that, when the temple is pushed sidewise by *n* and forward by the lay, the head of the temple, consisting of the roller *g*, cover *j*, and trough *i*, moves in a curved line, dependent on the arc *w w*, which the link *q* describes, and of which the distance between the screws *r* *r'* is the radius, as shown by dotted lines in Fig. 3. As soon as the lay recedes and leaves the lug *p*, the head of the temple describes the curved line *w w* in a reverse direction, by reason of

the contraction of the cloth and the guidance of the link *q*.

Should it happen that the shuttle remains in the shed, and is forced against the temple by the lay while "beating up," it is necessary to have a further backward motion from *w* to *d* of the stem *d*, to avoid a breakage. Such further motion would be impossible if the screw *r'* was made to pass through a round neatly-fitting hole; but by elongating or slotting the hole, as at *s*, Fig. 3, the object is attained.

I do not claim as my invention the stem *d*, incline *f*, roller *g*, cover *j*, nor trough *i*, in the abstract, nor do I claim V-shaped projections on the stem *d* entering into V-shaped recesses on the frame *a*; but

What I claim as my invention is—

1. The combination of the inclined surface *f* on the stem *d* with the corresponding surface in the interior of the lug or ear *e*, or their equivalents, substantially as and for the purpose herein specified.

2. The arrangement of the roller *g*, cover *j*, trough *i*, slot *k''*, elongated shank *l'*, substantially as and for the purpose herein set forth.

3. The combination of the trough *i* and cover *j*, cast together in one piece, or otherwise fastened with an adjustable stud, *l*, substantially as and for the purpose herein specified.

4. The combination of cover *j* and stem *d*, cast together in one piece or otherwise fastened together, with an adjustable trough, *i*, substantially as and for the purpose herein set forth.

5. In combination with the inclined projection *n*, attached to the lay, as described, the stem of the temple, provided with the lug *p*, when operating together, as described.

6. The link *q*, provided with the oblong aperture *s*, and pivoted to the frame *a* by the screw *k*, when combined with the stem *d* of the temple, for the purpose of regulating its lateral movement, by means of the screw *r'*, as described.

In testimony whereof I have affixed my hand this 10th day of December, 1869, in presence of two subscribing witnesses.

W. H. HOWARD.

Witnesses:

WM. RUSSELL,
JOHN M. HALL.