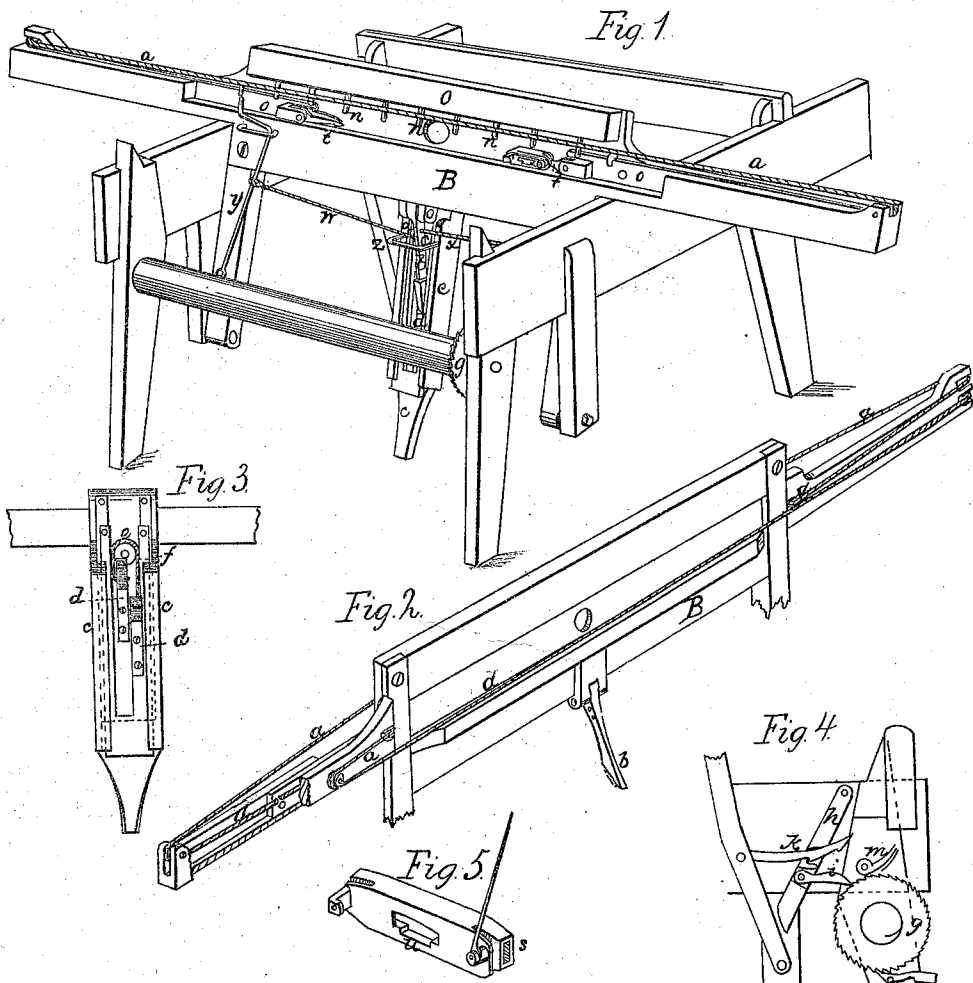


J. G. Garretson.
Hand Loom.

Nº 88,621.

Patented Nov. 3, 1868.



Witnesses
Talbot Jones
Alfred Mohr

Inventor
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United States Patent Office.

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Letters Patent No. 83,621, dated November 3, 1868; antedated October 22, 1868.

IMPROVEMENT IN 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, JOHN G. GARRETSON, of the city of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a new and useful Improvement in Hand-Looms, especially adapted to weaving rag-carpets, heavy bagging, and such other fabrics as require a slow, sure, and regular shuttle-motion, and one that is easily controlled by the operator; and

It consists in the novel method of shedding the web by the action of the batten in its backward vibration upon the pendants of the harness, by means of a finger, without the intervention of treadles or their equivalents, the finger itself acting on the pendants.

Also, in forming a guiding-groove in front of the reed, by inserting pins in the hand-rail, to guide the shuttle unerringly through the web, it being carried or driven by the guides in the guiding-groove, and propelled by an endless cord, in the hand of the operator, the guides transferring the shuttle from one to the other as they meet in the middle of the web.

Also, a take-up motion, self-acting, and acting only as the woven fabric requires moving or drawing down.

Also, a shuttle or bobbin-holder, so arranged as to be attached to the inner end of one of the guides, there to be retained until the other guide meets it and detaches it, and attaches it to itself, and draws it to the other side of the loom as the guide returns.

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.

Figure 1 is a perspective view of the loom put together, except the breast-beam, which has been removed the better to show the working parts.

Figure 2 is a back view of the batten, showing the manner of passing the endless cord, *a a a*, over and around the pulleys, so as to produce the desired movement in the guides to which it is attached, also showing the finger *b* and its attachment.

Figure 3 is a front view of the pendant-case *c c*, and the pendants *d*, (to which the harness-shafts are to be attached,) the pulley *e*, and the pendant-cord *f*, suspended on the pulley *e*. (Parts of the same are seen at like letters in fig. 1.)

Figure 4 is a section of the right side of the loom, showing the parts designed for the take-up motion, the rag-wheel *g*, the lever *h*, the dog *i*, the pawl *k*, and the fly *m*; also, an end view of the breast-beam, removed from fig. 1.

Figure 5 is the shuttle or bobbin-holder, adapted to be attached to the guides, and be by them driven or drawn through the web, and transferred from one to the other, whenever the guides meet each other, and there retained until the next meeting of the guides.

Like letters designate corresponding parts of all the figures.

To enable others skilled in the art to construct and

use my invention, I will more particularly describe the parts, referring by letters to the same.

The shedding of the web is accomplished by the action of the finger *b*, fig. 1, on the pendants *d d*, fig. 1, the pulley *e*, and the cord *f*, fig. 3. The pendants are confined in the case *c c*, fig. 3, (which is fixed to an adjacent part of the loom-frame,) and play up and down far enough to give motion to the harness-shafts, to which they are attached, to produce a sufficient shed in the web, and are suspended by the cord *f* over the pulley *e*, so that either pendant descending, elevates the other, and they are caused to descend by the finger *b* coming in contact with them, acting on a shoulder with which they are provided for that purpose, as the batten goes back, as seen at fig. 1. The finger *b* is caused to act alternately on the pendants by means of the elastic cords *w* and *x*, and the lever *y*, fig. 1, or their mechanical equivalents. The shuttle coming in contact with the lever *y*, draws the finger to that side, giving more tension to the cord *w*, and when the shuttle is at the other side, the tension is removed from the cord *w*, and the cord *x*, by its elasticity, draws the finger to that side, in a suitable position to act on the shoulder of the other pendant.

The shuttle is traversed through the shed by an endless cord, *a a a*, figs. 1 and 2, and two flat pieces of wood or metal, called guides, *o o*, fig. 1, having on their inner ends loosely-hinged latches, *t t*, fig. 1, so arranged that when the guides and shuttle come in contact, the latch of one will fall into a notch in the shuttle provided for that purpose, and connect the guide and shuttle together. To these guides, at the outer end, is attached the endless cord, reflected over pulleys as seen at figs. 1 and 2, so that any motion of the cord will make the guides simultaneously approach or recede from each other. The shuttle and the guides are conducted through the shed, in a groove formed in front of the reed, by inserting pins in the hand-rail or batten-cap extending down a little more than one-half of the width of the reed, leaving a channel between the pins and the reed for the shuttle and guides to play freely in, say from one-eighth to one-quarter of an inch in width, to suit the thickness of the guides. (The pins are seen at *n n*, fig. 1.)

Each guide should be six or eight inches longer than one-half the length of the reed, and one-quarter of an inch wider than one-half its width, and provided with a flat-pointed loosely-hinged latch, hooked as represented in the figure at *t*, fig. 1, for the purpose of falling into the notch *u*, fig. 5, in the shuttle, and retaining it while being moved through the web.

Fig. 5. The shuttle or bobbin-holder is provided with the notch *u*, adapted to receive and retain the latches of either guide, but is only capable of receiving one at a time, so that when the shuttle is pushed to the centre of the lay or batten by one guide, the other guide meets it there, and pushes its latch under the

latch of its fellow, and lifts it out of the notch, and causes its own latch to occupy the notch, and bears off the shuttle to the opposite side of the loom, and retains it until the next meeting of the guides, when it, in its turn, is made to relinquish its hold, and its fellow bears off the shuttle.

The guides are moved, as above indicated, by the operator grasping the cord *a a a* at or near the centre of the hand-rail, and moving the hand first to the right and then to the left, till the desired effect is produced.

Take-up motion: The taking up of the web is accomplished by a pawl *k*, the fly *m*, the lever *h*, and the dog *i*, (all seen in fig. 4,) acting on the rag-wheel of the cloth-beam *g*. The pawl *k* is pivoted in the sword of the batten, and works back and forth with the batten, and as the batten goes back, the pawl, by a notch in its under side, engages with the lever *h* and draws it back, and the dog falls into the lower notches of the rag-wheel, and as the batten comes forward, it presses on the lever *h*, drives the rag-wheel, and takes up the cloth. And so every motion of the batten would move the rag-wheel one or more notches forward, were it not for the intervening action of the fly *m*, which is so fixed, that when the vibrations of the batten are long enough for the pawl *k*, with its notch near its loose end, to engage with the fly, on going back, the fly will raise the pawl so high that it cannot engage with the lever *h*, and no effect will be produced on the rag-wheel until there has been so much filling thrown in that the vibrations of the batten are so much shortened that the pawl cannot reach the fly to engage with it, but consequently will engage with the lever *h*, and continue the taking-up process until the woven fabric is so far moved or drawn down, that the vibrations of the batten are long enough to cause the pawl to engage with the fly, as before stated, making a take-up acting with great regularity, and well adapted to hand-loom weaving.

Operation.

By the hand-rail push the batten back, and the shed is made. Then firmly grasp the cord *a a a* near the middle of the hand-rail, and move the hand to the right until the guides meet and the shuttle is exchanged from one guide to the other. Then bring the hand back to the middle of the hand-rail, and the shuttle will have passed through the web. Beat up the filling and repeat the process; a process well adapted to weaving rag-carpets, as the shuttle-motion is altogether under the control of the hand of the operator, and may be so carefully conducted, that the tenderest rag-filling will scarcely ever break.

Claims.

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

1. The combination of the batten, the finger *b*, the pendants *d*, the cord *f*, the pulley *e*, and the case *c c*, for the purpose of operating the harness, as above described.
2. The cords *v* and *z*, in combination with the lever *y* and finger *b*, for the purpose of operating the pendants, as above described.
3. The combination of the guide-pins *n n n*, with the hand-rail or batten-cap, and with the sliding guides *o o*, in the manner and for the purpose above set forth.
4. The endless cord *a a a*, arranged with the batten and its guiding-pulleys, in combination with the shuttle-working or carrying guides *o o*, for the purpose above shown and described.
5. The combination of the pawl *k*, the fly *m*, the dog *i*, and the lever *h*, acting on the rag-wheel of the cloth-beam, and making a take-up motion, as above set forth and described.

In testimony of which invention, I hereunto set my hand, at Cincinnati, Ohio, this 7th May, 1867.

Witnesses: JOHN G. GARRETSON.

TALBOT JONES,
ALFRED ST. JOHN.