

C. R. SAATWEBER.
LOOMS FOR WEAVING FRINGES.

No. 171,582.

Patented Dec. 28, 1875.

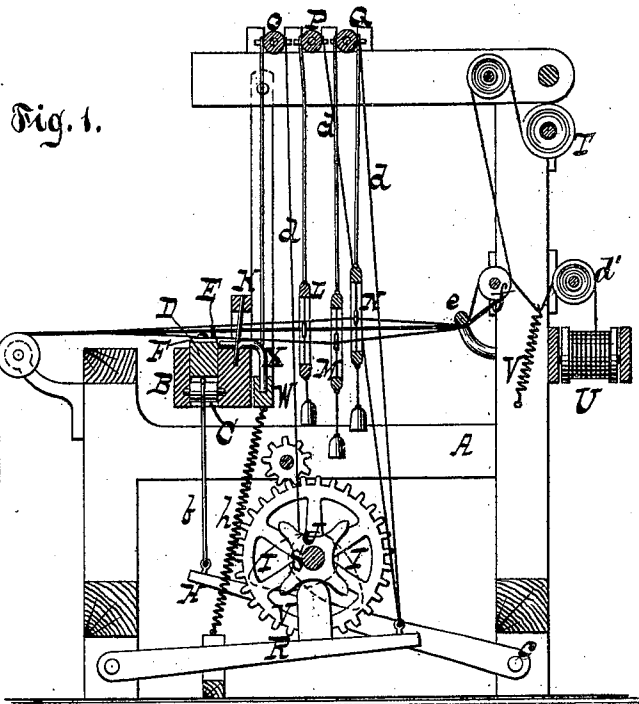
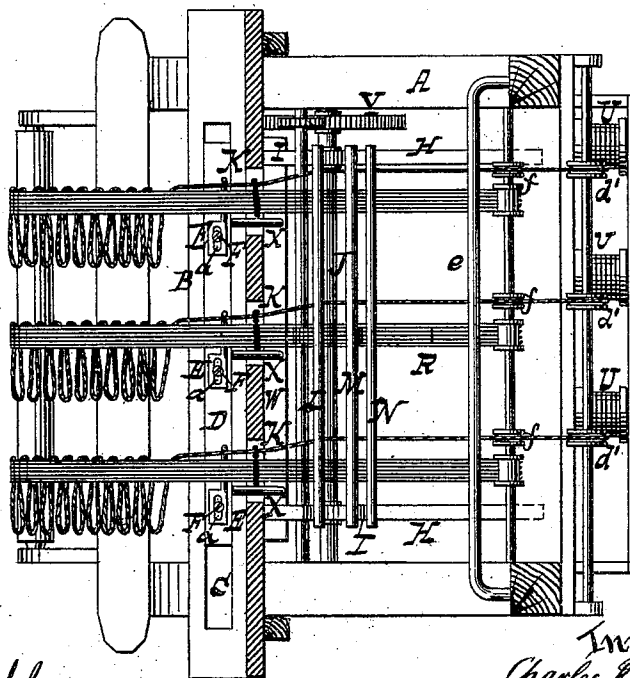


Fig. 2.



Witnesses:
Otto Aufeland
Chas. Wahlen

Inventor.
Charles Robert Saatweber
per
Van Santvoord & Hauff
Attys.

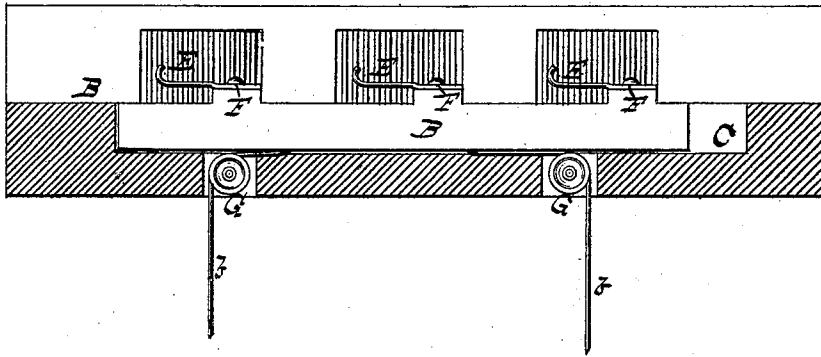
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Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES ROBERT SAATWEBER, OF NEW YORK, N. Y.

IMPROVEMENT IN LOOMS FOR WEAVING FRINGES.

Specification forming part of Letters Patent No. **171,582**, dated December 28, 1875 application filed November 10, 1875.

To all whom it may concern:

Be it known that I, CHARLES ROBERT SAATWEBER, of the city, county, and State New York, have invented a new and useful Improvement in Looms for Weaving Fringes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a longitudinal vertical section. Fig. 2 is a horizontal section. Fig. 3 is a longitudinal section of the batten on a larger scale than the previous figures.

Similar letters indicate corresponding parts.

This invention consists in the combination of a fringing-hook and a releasing-lifter with the batten and the harness of a loom, said fringing-hook receiving a sliding motion transversely to the warp, so that the material from which the fringes are to be formed, and which I term the "bullion," is placed, at the proper time, into the path of the hook, and, after having been drawn out to the required distance by the return movement of the hook, it is thrown out of said hook by the action of the lifter, while at the same time the shed is changed, and the inner end of the fringe is fastened. With the spool which contains the bullion, and with the fringing-hook, is combined a tension-spring provided with an eye, through which the bullion is passed on its way from the spool to the hook, so that as the bullion is drawn out by the hook a sudden jerk on the spool is avoided, and the bullion is prevented from becoming entangled.

In the drawing, the letter A designates the frame of a loom; and B is its lay or batten, which is arranged in the frame in such a manner that it is susceptible of an oscillating motion. The batten is provided with a longitudinal groove, C, in which is arranged a slide, D, which carries fringing-hooks E, (one or more,) the groove C being made of greater length than the slide D, so that the latter, together with the fringing-hooks E, can move to and fro on the batten. The fringing-hooks E are attached to the slide D by adjusting-screws F, passing through slots *a*, Fig. 2, with which the hooks are provided, and by this means the hooks are rendered adjustable. The fringing-hooks receive a reciprocating motion through the slide D, which derives such motion from

bands *b b*, which are fastened at one end to the slide D, and which pass over rollers G G, arranged in the bottom of the groove C, (see Fig. 3,) while the other ends of said bands are fastened to treadles H H. These treadles H H are arranged to swing vertically on pivots *c*, as clearly shown in Fig. 1, while they are subjected to the action of cams I I, mounted on the main shaft J, which has its bearings in the frame A. On this shaft J is also mounted a cog-wheel, Y, through the medium of which it receives a revolving motion. The cams I I are arranged at right angles to each other; hence, when the driving-shaft J is revolved the treadles H H are successively depressed, and the bands *b b* are pulled correspondingly, while a reciprocating motion is imparted to the slide D and the fringing-hooks. The batten B carries reeds K (one or more) of the ordinary construction, such reeds corresponding in number to the fringing-hooks E E. The letters L M N designate heddles composing the harness of my loom. The heddles M N serve to receive and shift the warp-threads, while the heddle L receives the bullion which forms the weft and the loops of the fringe to be woven by the loom. The shifting of the heddles L M N is, in this example, accomplished by means of rock-shafts O P Q, from which the heddles are suspended by suitable bands. These rock-shafts are connected, by means of cords *d*, to treadles R, which are operated by cams S, mounted on the driving-shaft J. The warp-threads are taken from a beam, T, which is arranged in the frame A, while the bullion passes from spools U, (one or more,) corresponding in number to the fringing-hooks E; thence over anti-friction rollers *d' f*, and around a bar, *e*, and through the reeds K. Between the rollers *d' f*, or at any other suitable point between the spools U and the fringing-hooks, I arrange a tension-spring, V, one end of which is secured to the frame A, while the other or free end is bent to form an eye, through which the bullion is passed. By the action of this spring V a sudden jerk on the spools is avoided when the bullion is drawn out by the fringing-hooks E, as hereinafter described, and the bullion is prevented from becoming entangled. The bullion is passed through such a part of the reeds K that it is brought alongside the

warp-threads, as seen in Fig. 2, while the fringing-hooks E are so arranged that they pass through the shed in their reciprocating movement. In the rear of the batten B is situated a bar, W, carrying lifters X, (one or more,) which project forward through and beyond the reeds K. A vertically-reciprocating motion is imparted to the lifter-bar W by means of the rock-shaft O, to which the bar is connected, by a cord, g, and by the action of a spring, h, one end of which is connected to the lifter-bar W, and the other end to the lower part of the frame A.

The operation of my loom is substantially as follows: The bullion is raised and retained in an elevated position by the heddle L until its hook E passes between the shed of the warp. The bullion is then dropped on the hook, as represented in the drawing, whereupon the hook recedes, and draws out the bullion so as to form a loop. When the bullion has been drawn out the required distance to form a loop, the loop is lifted out of the hook E by the action of the lifter X, while simultaneous therewith the shed is changed, and the inner edge of the fringe formed by the loop is fastened. The loops of the fringe may be made of greater or less length by a suitable adjustment of the fringing-hooks.

It will be observed that by using a number of fringing-hooks, E, several lengths of fringe can be woven by a single loom.

I do not wish to be restricted to the means used in this example for operating the working parts of my loom, and particularly the fringing-hooks E and the lifters X, as the same may be obviously modified without departure from my invention.

In practice I use two or more bullions for each fringing-hook, said bullions being either of the same or different colors. Of course the motion of the fringing-hook and of the harness must be adjusted accordingly.

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

1. The combination of fringing-hooks E, and reciprocating lifters X, (one or more,) with the batten B, and the harness L M N, such fringing-hooks adapted to receive a reciprocating motion transversely to the warp, substantially as described.

2. The tension-spring V, in combination with the spool which carries the bullion with the fringing-hooks, the reciprocating lifters X, and the batten, and harness of a loom, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 5th day of November, 1875.

CHARLES ROBERT SAATWEBER. [L. s.]

Witnesses:

LOUIS TISCH,

ALFONS KREUTZBERG.