S. S. JACKSON.

WEFT FORK FOR LOOMS.

APPLICATION FILED DEC. 17, 1913.

1,100,660.

Patented June 16, 1914.

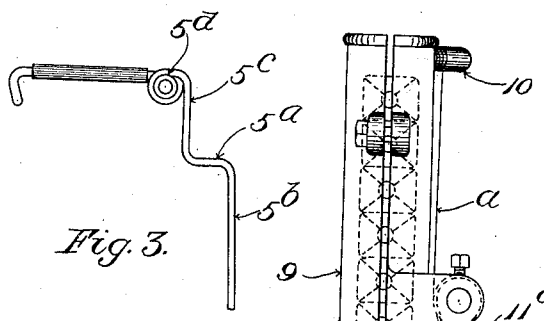


Fig. 3.

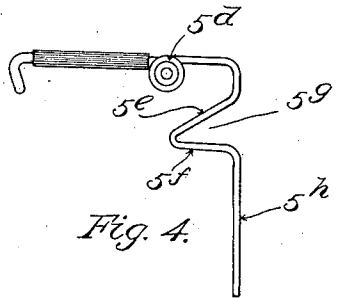


Fig. 4.

Fig. 2.

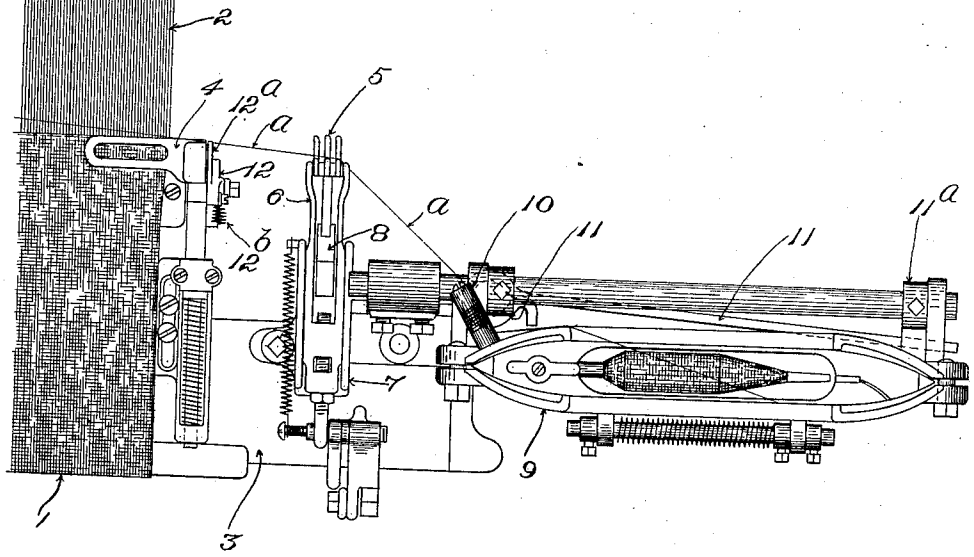


Fig. 1.

Witnesses:
Oscar F. Hill
Ellen O. Spring

Inventor:
Simeon S. Jackson
by Chas. F. Randall
Attorney.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SIMEON S. JACKSON, OF READVILLE, MASSACHUSETTS, ASSIGNOR TO THE STAFFORD COMPANY, OF READVILLE, MASSACHUSETTS, A CORPORATION OF NEW JERSEY.

WEFT-FORK FOR LOOMS.

1,100,660. Specification of Letters Patent. **Patented June 16, 1914.**

Original application filed April 21, 1910, Serial No. 556,761. Divided and this application filed December 17, 1913. Serial No. 807,245.

To all whom it may concern:

Be it known that I, SIMEON S. JACKSON, a subject of Great Britain, residing at Readville, Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Weft-Forks for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

The present invention is a division of that of my application for U. S. Letters Patent for improvements in weft replenishing looms, filed April 21, 1910, Serial No. 556,761.

In looms in which replenishment of the working weft-supply is effected automatically, the free ends of the weft-threads carried by the reserve shuttles or weft-carriers contained in the magazine are engaged with a suitable weft-end holder, so that when one of such shuttles or weft-carriers is brought into service in weaving the starting end of the weft-thread carried thereby is held so that it pays out through the delivery eye of the shuttle and is thereby caused to lie in the shed in the warp-threads as the shuttle makes its first flight following the replenishment. In consequence of the starting end being thus engaged, a so-called weft-end remains extending from the weft-end holder to the adjacent selvage of the cloth being woven. This weft-end is or should be parted close to the said selvage, for which purpose a weft-end parter is employed, usually mounted upon the loom-temple at such selvage, and operating to effect the parting by breaking or cutting the weft-end. In looms in which a weft-fork is employed at the same side of the loom, located between the weft-parter and weft-end holder, the weft-fork interferes with the prompt parting of the weft-end. Its tines hold the weft-end back when the first pick of the fresh weft is beaten up, thereby preventing the weft-end from entering completely into the grasp of the weft-parter so as to be parted thereby, and also slackening the weft-end so that as a result a number of picks of the shuttle take place before the cloth becomes advanced sufficiently by the taking-up to draw the weft-end into such grasp, delaying thereby the parting of the weft-end.

The object of the invention is to obviate interference by the weft-fork with the prompt parting of the weft-end. In accomplishing this object I construct the weft-fork at its working face with a recess adjacent its feeler-portions for coacting with the working weft-thread, such recess receiving the outwardly-extending weft-end and affording clearance or relief therefor. Thus, instead of being held back by the weft-fork as usual, the weft-end occupies the clearance-recess, and thereby is permitted to enter into the grasp of the weft-parter at the first beat-up by the lay following replenishment. Hence the weft-parter is enabled to part the weft-end immediately.

Embodiments of the invention are illustrated in the drawings, in which latter,—

Figure 1 shows in plan certain parts of a loom designed to effect replenishment by automatically making change of shuttle, one embodiment of the invention being shown in connection therewith. Fig. 2 is an elevation looking from the right hand side in Fig. 1. Fig. 3 is a side elevation of the weft-fork shown in Figs. 1 and 2 in connection with the other devices. Fig. 4 shows in side elevation a slightly different form of weft-fork.

In Figs. 1 and 2 a portion of cloth is represented at 1, and at 2 are shown portions of the warp-threads extending rearwardly in the loom therefrom.

3, Fig. 1, is a portion of the breast-beam.

A loom-temple is shown at 4 in engagement with the selvage-portion of the cloth.

At 5 is a weft-fork located adjacent the temple 4, its usual carrying slide being shown at 6 mounted in the guideway 7 on the breast-beam, and a portion of the weft-hammer is represented at 8 in Fig. 1.

A magazine for reserve shuttles is shown at 9 at the outer end of the breast-beam, and at 10 is a weft-holder applied to the rear of the said magazine, at its inner end, near the top thereof, it being in the form of a wooden cylinder conveniently fastened to the rear side of the magazine by means of a screw. The starting ends of the weft-threads in the shuttles contained in the magazine are wrapped around the said holder. In the present instance a weft-end guide, shown at 11, is employed in connection with the lower portion of the magazine, it being located just above the open mouth

at the base of the magazine through which the shuttle which is being transferred to the lay is carried rearward by the action of the feeding or transferring devices (not shown). This guide consists of a piece of wire fastened by its outer end in a supporting arm 11^a depending from a bracket on the magazine, the main length of the wire, constituting the stem of the guide, extending horizontally toward the adjacent side of the loom from the said supporting arm, and the wire being bent at its inner end to form an open loop or hook. As the bottom shuttle of the stack contained within the magazine is transferred from the base of the magazine to the lay, the weft-end extending from the delivery eye of such shuttle to the weft-end holder is carried by the rearward movement of the shuttle against the horizontal stem of the guide, and as the ensuing pick of the shuttle from such end of the lay to the opposite end takes place the weft-end slips inward along the stem of the guide, effecting entrance into the eye or loop at the inner end of the guide, wherein it remains confined.

At 12 is a weft-parter mounted on the outer side of the head of the temple. It may be of any desired construction. In the present instance I have shown a parter comprising a cutting blade 12^a, carried by a lever pivoted upon the temple-head, the said lever being acted upon by a contracting spiral spring 12^b, Fig. 1, which holds the said lever normally in its retracted position, with the cutting blade elevated above a notch in the rear face of the temple-head. The depending portion of the said lever constitutes a tail which in the advance of the lay is struck by the latter, so that the lever shall thereby be turned upon its pivot and the cutting blade moved across the notch of the temple-head.

Figs. 1 and 2 represent the situation following the first pick after replenishment, a weft end *a* being shown extending down from the weft-end holder 10 through the eye or loop of the guide 11 and thence past the weft-fork, weft-parter, and temple into the shed, the weft-thread extending obliquely rearward within the shed toward the opposite side of the loom. These figures show the weft-end occupying the recess with which, in accordance with my invention, I construct the weft-fork for the purpose of affording sufficient clearance or relief to the weft-end to permit it to draw forwardly into the grasp of the weft-parter. In Figs. 1 and 2, and in Fig. 3, in which the weft-fork of Figs. 1 and 2 is shown separately, the clearance-recess is provided by bending the tines of the weft-fork downward immediately adjacent the pivotal hub 5^d, and then cranking or bending the same horizontally as at 5^a, and then again vertically downward so that the feeler-portions 5^b shall be offset to a considerable extent with reference to the upper portions 5^c and also with reference to the pivotal point or hub 5^a. The working face of the weft-fork is substantially upright. The weft-clearance recess is thereby formed in the upper portion of the working face of the weft-fork and the tines of the fork extend downward from such recess, forming the feeling portions 5^b for engagement with the working weft-thread in the loom. The weft-end holder and the guide 11 are elevated relatively to the selvage so that the weft-end draws in an upward direction from the selvage to the said guide and holder. Thereby the weft-end is somewhat elevated at the weft-fork and caused to find its way into the clearance-recess. In some cases the guide 11 may be dispensed with and a weft-end holder of any desired character may be located at a lower point than that of its position shown in Fig. 2.

In the form of weft-fork shown in Fig. 4 the tines, instead of being bent directly downward from closely adjacent the pivotal point or hub 5^a, extend rearward a short distance from the said pivotal point or hub and are then bent downwardly, and then are carried in an oblique direction downwardly and forwardly as at 5^e, being then bent or cranked horizontally rearward as at 5^f forming the clearance-recess 5^g, the tines extending downward from the recess so as to form the feeler-portions 5^h.

The form and construction of the weft-fork, and the shape, etc., of the clearance-recess, may be further modified without necessarily involving a departure from the principle of the invention.

I claim as my invention:—

1. A weft-fork having a substantially upright working face and a weft-clearance recess in the upper portion of such face with its tines extending downward from such recess and forming the feeler portions for engagement with the working weft-thread in a loom.

2. A weft-fork having its tines bent to form a weft-clearance recess in the upper portion of its working face, with the lower portions thereof extending downward from such recess and forming the feeler-portions for engagement with the working weft-thread in a loom.

In testimony whereof I affix my signature in presence of two witnesses.

SIMEON S. JACKSON.

Witnesses:

E. W. BARRETT,

CHAS. F. RANDALL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."