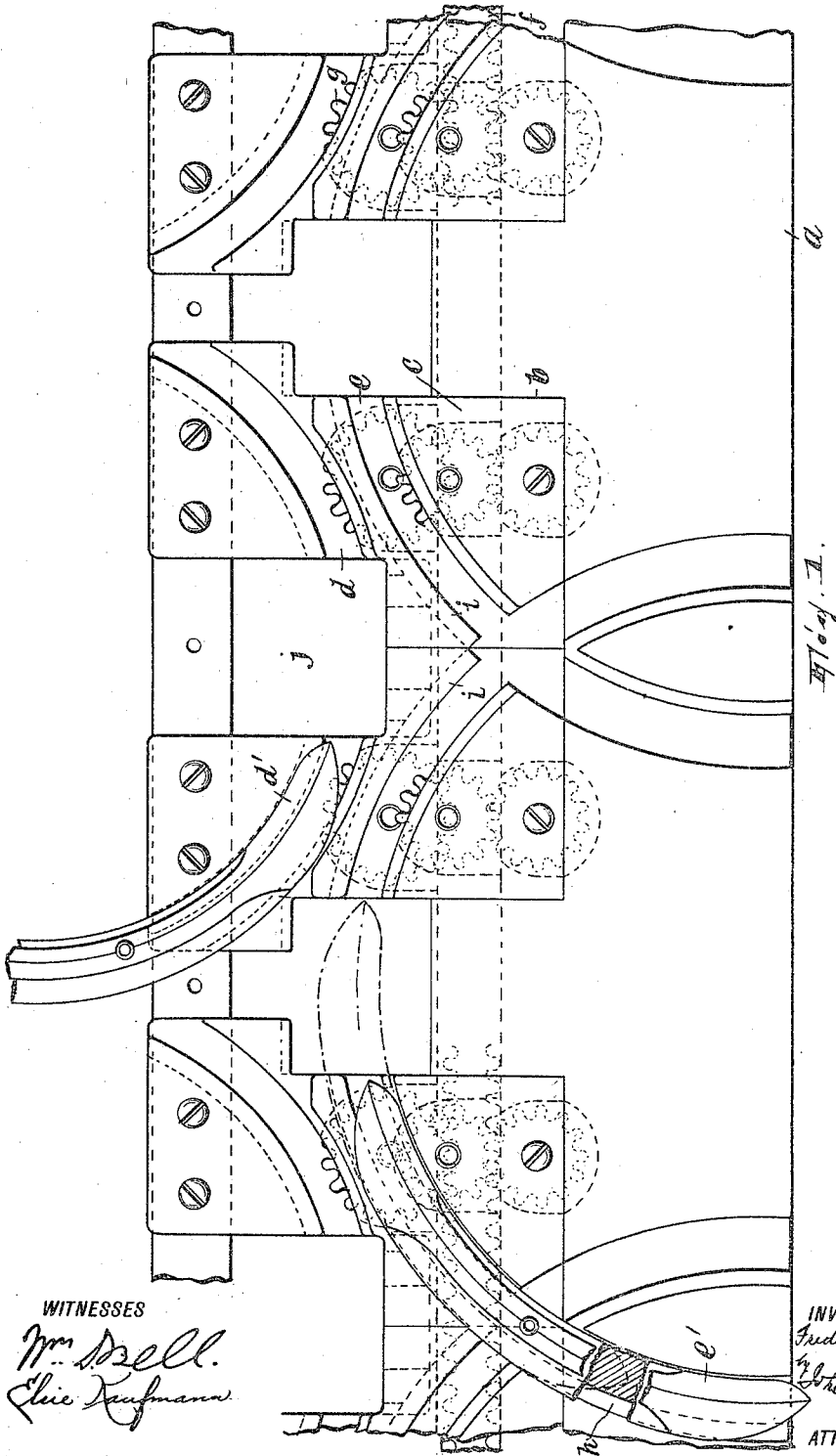


F. BENZ, JR.
BATTEN STRUCTURE FOR NARROW WARE LOOMS.
APPLICATION FILED DEC. 20, 1912.

1,063,178.

Patented June 3, 1913.

2 SHEETS—SHEET 1.



WITNESSES

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Elise Kaufmann.

INVENTOR,
Frederick Benz, Jr.
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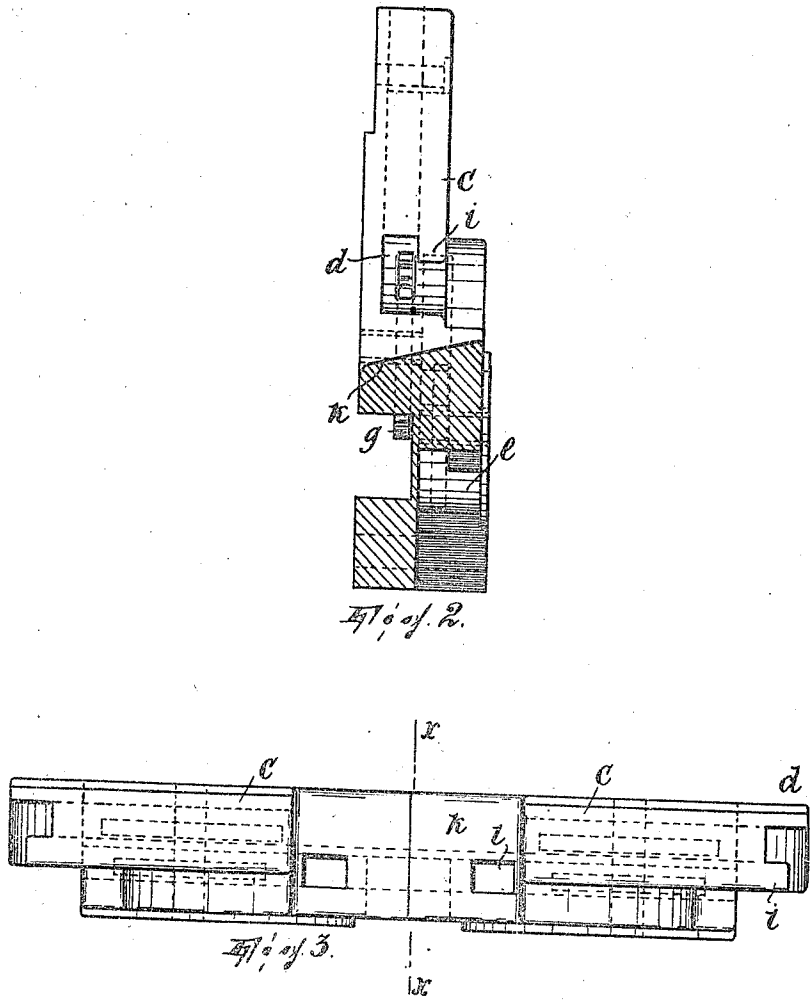
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BATTEN STRUCTURE FOR NARROW-WARE LOOMS

1,063,178.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed December 20, 1912. Serial No. 737,788.

To all whom it may concern:

Be it known that I, FREDERICK BENZ, JR., a citizen of the United States, residing at Haledon, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Batten Structures for Narrow-Ware Looms, of which the following is a specification.

This invention consists in certain improvements in batten structures for narrow ware looms of substantially the kind set forth in my application for Letters Patent filed September 16th, 1912, Serial No. 718818. In the construction set forth in said application one of the salient features is a peculiar disposition of the pairs of shuttle blocks having for one of its purposes to increase the number of weaving spaces in the batten without materially reducing the width of the weaving spaces, such object being accomplished partially through extending the races for the shuttles (specifically in that instance, the lower races—the batten structure being of the double decker type) outside of their respective blocks and into adjoining structure, in that case the adjoining blocks and the batten proper. It is desirable in these structures that each block should be capable of removal, individually, for the purpose of repairs, adjustment of its parts, and so on. In my previous construction, however, this is impossible: that is to say, with each shuttle long enough properly to bridge its weaving space it must of necessity be also so long as to extend, when it even only just clears one of the blocks, more or less into that portion of its race which extends beyond the other block into structure adjoining the latter: (If the blocks were made wider it is obvious that an increase in capacity of the batten would not be attained). Shuttle races must of course be provided with retaining flanges which engage corresponding flanges on the shuttles and prevent them from forward displacement. It is therefore quite obvious that even though the shuttle in any particular block be moved in its race so as just to clear the complementary shuttle block, removal of the first block would be impossible because the shuttle would be interlocked with that part of the adjoining structure into which it projects.

The principal object of my present in-

vention is to avoid this and make possible the unobstructed removal of any one shuttle block.

In the accompanying drawings, Figure 1 is a front elevation of sufficient of the improved batten structure to illustrate the invention; Fig. 2 is a sectional view on the line $x-x$ of Fig. 3; and, Fig. 3 is a plan view of two adjoining shuttle blocks.

The batten-proper a has set into the elongated rectangular recesses b therein, disposed at regular intervals, the shuttle blocks c provided with upper and lower sets of forwardly open grooves d and e in which move the shuttles d' and e' under actuation from a suitable rack f through series of pinions g of which each series or set is wholly contained within a shuttle block; the shuttle blocks are removably secured in any suitable manner in the recesses b . For the purpose already indicated each race e extends laterally and downwardly beyond the pair of blocks in which it is formed into adjoining structure, being in the present instance a shuttle block of each adjoining pair and the batten proper. As usual, each shuttle has an upwardly projecting longitudinal flange h (extreme left, Fig. 1) to engage against the back of a corresponding flange i (Fig. 3) so as to retain the shuttle against forward displacement and prevent its sagging at the front.

In accordance with the present invention, I terminate the flange i of each race e short of the ends of said race, that is, at each point where the race leaves the pair of blocks in which it is formed and proceeds into the two adjoining blocks and then into the batten proper. So far as the two blocks are concerned, this produces two reversed substantially right angular cut-outs, one in each block, or, otherwise stated, a cut-out in the two blocks which is in the form of an isosceles triangle. Thus, while sufficient of the race beyond the sides of the pair of blocks to which it appertains is retained for the principal service of supporting and guiding the shuttle, and while also sufficient of the flange i is retained for preventing forward release of the shuttle, yet if the shuttle be shifted into one of its pair of blocks so that it more or less clears the other the first-named block can be removed, without obstruction, carrying the shuttle, from the batten.

In my prior construction the alternate weaving spaces, designated *j*, projected into the grooves *e* (shown as upwardly curved and staggered with relation to the downwardly curved grooves *d*), interrupting the continuity of the grooves at those points and weakening the blocks. In the present construction, the space *j* is formed by cutting down into the blocks appreciably short of the grooves *e*, and in order that the warp shed may have sufficient clearance the bottom of the recess which forms the weaving space *j* is inclined rearwardly, as shown in Fig. 2, at *k*. Further, in each shuttle block from the surface *k* down to and communicating with each groove *e* is cut a sight opening *l* whose function is to facilitate the primary adjustment of all the shuttles when the structure is organized.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A batten structure for narrow ware looms having pairs of spaced removable shuttle blocks and forwardly open shuttle-guiding grooves each formed in a pair of the blocks and in portions of said structure adjacent said pair at both sides thereof, and shuttles respectively arranged in said grooves, each shuttle having a longitudinal upright retaining flange and each groove having a similar upright retaining flange bearing against the forward side of the shuttle flange and terminating at or within the sides of said pair of blocks, whereby, on shifting each shuttle to a position where it clears one block, the latter, carrying the shuttle, may be removed unobstructedly from the structure, substantially as described.

2. A batten structure for narrow ware looms having pairs of spaced shuttle blocks formed with downwardly curved upper shuttle-guiding grooves *d* and upwardly curved lower shuttle-guiding grooves *e* staggered relatively to grooves *d*, the adjoining blocks in each two adjoining pairs having formed therein a downward weaving-space-forming recess terminating at the front short of the grooves *e* and having its bottom surface beveled rearwardly, substantially as described.

3. A batten structure for narrow ware looms having pairs of spaced shuttle blocks formed with downwardly curved upper shuttle-guiding grooves *d* and upwardly curved lower shuttle-guiding grooves *e* staggered relatively to grooves *d*, the adjoining blocks in each two adjoining pairs having formed therein a downward weaving-space-forming recess terminating at the front short of the grooves *e*, substantially as described.

4. A batten structure for narrow ware looms having pairs of spaced removable shuttle blocks and forwardly open upwardly curved shuttle guiding grooves each formed in a pair of the blocks and each extending into the adjacent blocks of the pairs of blocks immediately next to that in which said groove is formed, and shuttles respectively arranged in said grooves and each having a longitudinal upright retaining flange, each groove having a similar upright retaining flange bearing against the forward side of said shuttle flange; the material of the blocks between the upper surfaces of the end portions of two adjoining grooves being cut away from the backs of said grooves to the front surfaces of the blocks and thereby forming a substantially triangular cut-out, substantially as described.

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

FREDERICK BENZ, JR.

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.