(No Model.)

O. W. SCHAUM.

BATTEN FOR LOOMS.

No. 485,886. Patented Nov. 8, 1892.

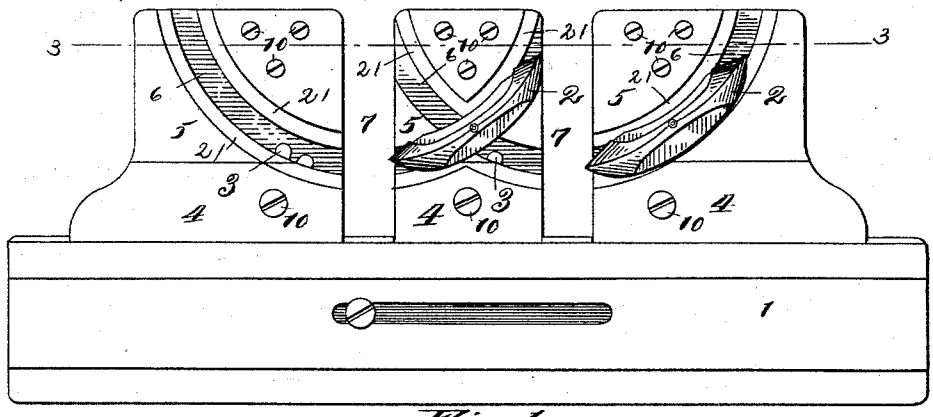

Fig. 1.

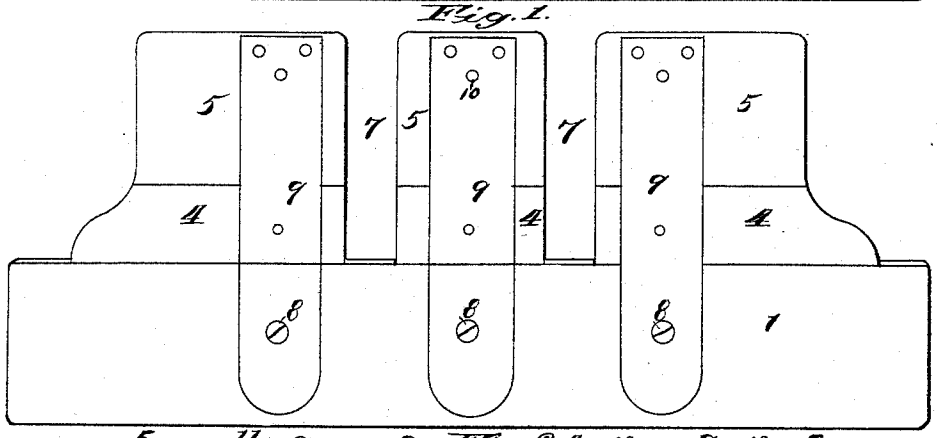

Fig. 2.

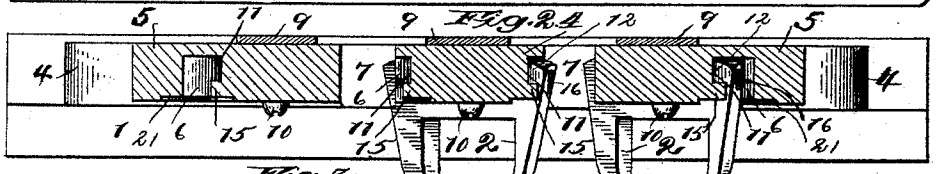

Fig. 3.

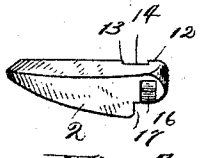

Fig. 4.

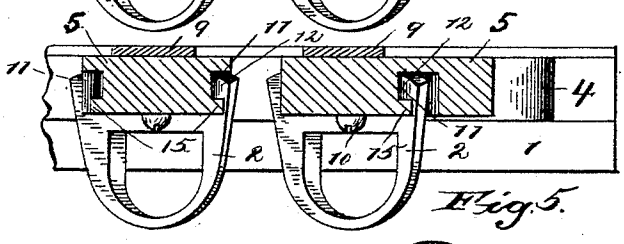

Fig. 5.

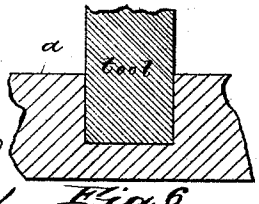

Fig. 6.

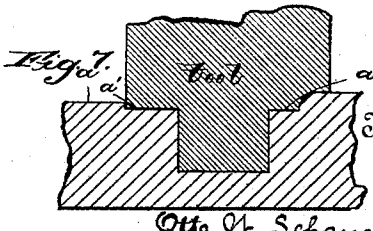

Fig. 7.

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UNITED STATES PATENT OFFICE.

OTTO W. SCHAUM, OF PHILADELPHIA, PENNSYLVANIA.

BATTEN FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 485,886, dated November 8, 1892.

Application filed August 23, 1892. Serial No. 443,891. (No model.)

To all whom it may concern:

Be it known that I, OTTO W. SCHAUM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Battens for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the battens which are employed in certain classes of looms—such, for instance, as narrow-ware looms—and in particular it relates to those battens in which the shuttles travel in arc-shaped paths that sometimes are termed "circles." In practice in making battens of this kind of the usual construction and in accordance with the methods of working heretofore followed a great deal of time and labor necessarily is expended in trimming and dressing the front faces of the blocks in which are formed the curved grooves in which the shuttles move in order that the said blocks may be made to properly fit and guide the shuttles.

My invention has for its main objects to obviate this expenditure of time and labor and to simplify the work of making a batten and preparing it for operation.

It also has for one of its objects to produce a batten of improved construction in which the shuttle shall be enabled to move with less resistance and friction than usual, and in which the grooves in the upper surfaces of the shuttles shall be guarded from dirt and dust.

My invention will first be described in connection with the accompanying drawings, and then will be particularly pointed out and distinctly defined in the claims at the close hereof.

In the drawings, Figure 1 is a view in front elevation of a batten made in accordance with my invention, the batten being shown for convenience in illustrating the same as of a length suitable for the use of two shuttles. Fig. 2 is a view of the same in rear elevation. Fig. 3 is a view of the same in horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a view of one of the shuttles in end elevation. Fig. 5 is a sectional view of part of a batten made without my improvement. Figs. 6 and 7 are diagrams.

At 1 is represented the batten-beam. The shuttles are marked 2 2, and the pinions which engage with the usual racks are marked 3 3. The said pinions will be actuated in practice in the usual manner by any desired form of known means for the purpose of moving the shuttles back and forth in the paths provided therefor.

At 4 4 4 is represented a series of blocks, which is applied to the upper side of the batten-beam, and at 5 5 5 a second series of blocks, which is disposed upon the blocks 4 4 4. In these blocks 4 4 4 and 5 5 5 is formed, as shown, the series of intersecting curved paths 6 6, in which the shuttles move.

At 7 7 are the spaces which are left between the respective pairs of blocks for the reception of the reeds and the passage of the two series of warp-threads. To the rear side of the batten-beam are fastened by screws 8 the iron plates 9 9 9, which project upwardly above the upper edge of the beam and have the respective pairs of blocks 4 4 4 and 5 5 5, fastened thereto in appropriate positions by the screws 10 10. The grooves in the blocks 4 4 4 and 5 5 5 are undercut on one side at 11 11 11 11, as shown, forming an offset portion which is entered by the flanges 12 on the upper sides of the shuttles. The said flanges and the shoulder 13 are formed by cutting away the material of the shuttle-bodies to form the grooves 14, which are made therein for the purpose of receiving the overhanging portions 15, that are left on the blocks in front of the under-cuts 11. At 16 is the rack which is formed on the under side of each shuttle for engagement with the pinions 3, and at 17 is a shoulder on the said under side in front of the said rack.

So far as has yet been described, the parts of my improved batten are similar in construction and operation to those of the battens commonly in use.

In operation as the shuttles are reciprocated they are retained in their paths by the presence of the flanges 12 12 in the undercut portions 11 11 of the grooves in the blocks, and the shoulders 13 17 slide in contact with those portions of the front surfaces of the blocks which are immediately adjacent to the sides of the grooves.

I will now explain the difference between a

batten embodying my invention and one made in the old style. In the latter, as shown in Fig. 5, the blocks 4 5 have plane faces, unbroken save by the grooves for the shuttles. In my improved batten the said blocks 4 5 have those portions of the faces thereof which are adjacent to the said grooves for the shuttles rabbeted or depressed, as at 21 21, in Figs. 1 and 3, slightly below the general level of the surface, the bottom of the rabbets being at all points equidistant from the inner portions of the grooves.

In making a batten embodying my present invention it is necessary to observe care in the preparation of the blocks in order that the objects of my invention may be fully secured. Ordinarily in making and fitting the blocks they are first secured in proper position on the batten-beam and each of them has made therein a curved groove or grooves of a certain depth by the action of a rotary cutter-head, as shown diagrammatically in Fig. 6. The blocks are then taken off and each is separately planed off on its upper surface *a* to insure that at all parts of the block the groove shall extend to the right depth below such surface to fit the shuttles. This work is necessary because it is found to be practically impossible in securing the blocks to the iron plates 9 9 9 in preparing for grooving them to secure them in place in such a straight and exact manner as that they shall come exactly right. In this operation of planing, which is performed by hand, some of the blocks are usually planed less than others, which necessitates scraping the thicker blocks while fitting in the shuttles.

In making a batten embodying my invention I proceed as indicated in Fig. 7—that is to say, I form on the cutting-tool on each side an extra lip or projection *a'*, which as the deep groove is being made cuts a shallow rabbet 21 on the face of the block, dressing the said face to within a fixed distance of the bottom of the groove. This renders me entirely independent of the accuracy or inaccuracy of the position of the blocks as occupied by them when secured to the plates 9 preparatory to being grooved, because no matter whether or not the upper face of a block lies under the cutting-tool in a horizontal plane the lips *a'* of the cutting-tool will cut away all such surplus material as may require to be removed in order to secure a predetermined distance between the bottom of the groove and the top surface of the rabbet. Exactly that same distance is secured all along the block and on every block from one end of the batten to the other, and this without it being necessary to take any block off from the batten after the grooving for the purpose of dressing the same by hand to correct unevenness. The final fitting in of the shuttles thereby is greatly facilitated.

The improved results which are secured by my invention will be apparent from the following: In finishing battens both the blocks and the shuttles are given a high finish and polish. In the case of the old form of blocks (shown in Fig. 5) the varnish and polishing compounds form a coating on those portions of the faces of the blocks which are adjacent to the grooves and on which the shoulders of the shuttle move. The "polish" usually is composed largely of shellac, which when warmth is generated through the friction consequent upon the movements of the shuttles becomes sticky and rough. This defect is obviated in my improved batten, for therein the shoulder left at the outer line of the rabbet forms a line of demarcation up to which the polish may be laid on the face of the block with perfect safety, for with care none need be applied to the depressed face of the rabbet, such face being below the general surface of the body of the block.

When dust and dirt collect upon or fall against the face of a block formed as heretofore, they are likely in falling thence to pass into the grooves of the shuttles. This does not occur with the rabbeted block, for the raised portions of its surface thereof overhang the rabbeted portions and deflect or shed the dirt and dust, so as that they seldom pass into the grooves of the shuttles.

I claim as my invention—

1. The combination, with the shuttles, of the batten-blocks formed with the curved or arc-shaped grooved paths or circles for the shuttles and having the faces thereof adjacent to said paths slightly rabbeted or depressed below the general level of the surface, substantially as described.

2. The combination, with the shuttles, of the batten-blocks formed with the curved or arc-shaped paths or circles for the shuttles and having the faces thereof adjacent to said paths slightly rabbeted or depressed below the general level of the surface, with the bottoms of the rabbets at all points equidistant from the inner portions of the grooves, substantially as described.

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

OTTO W. SCHAUM.

Witnesses:
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E. FRENCH.