

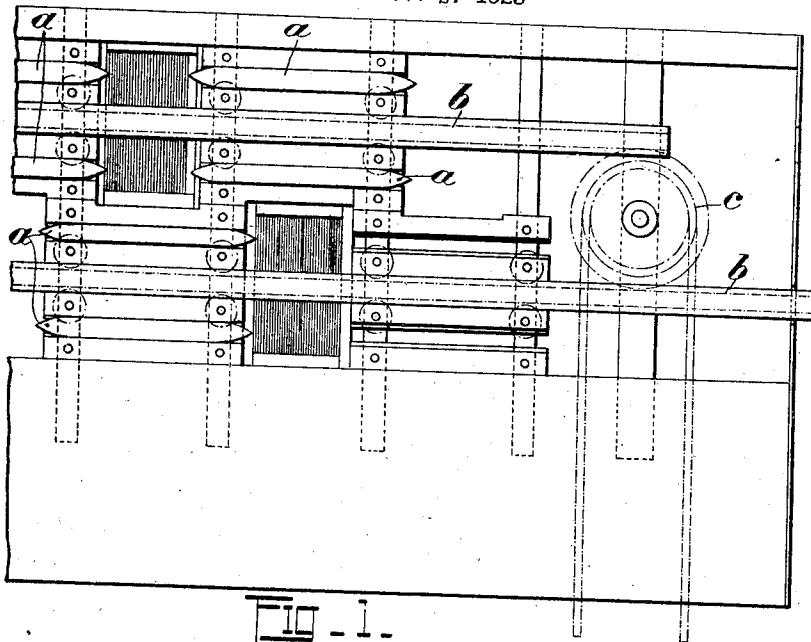
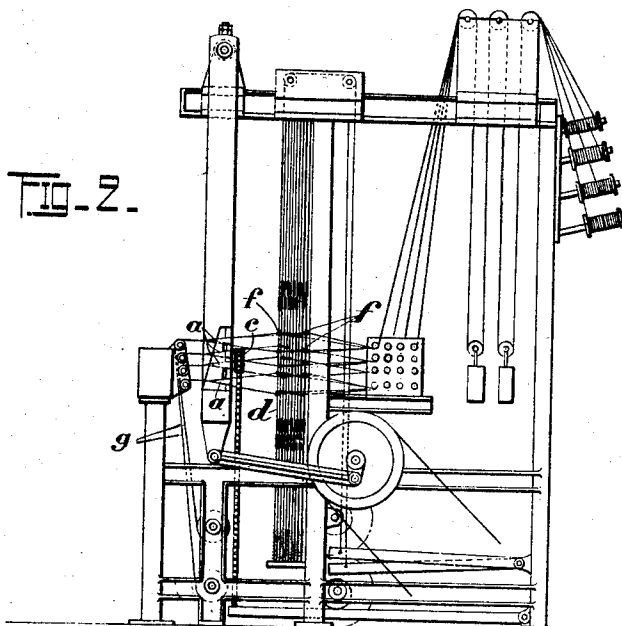
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MULTISTORY WEAVING BATTEN

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UNITED STATES PATENT OFFICE.

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MULTISTORY WEAVING BATTEN.

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The form of batten most used in the ribbon industry is the so-called double weaving batten. This batten consists of two rows of shuttles (an upper and a lower row), which are connected by means of pinions and two interconnected racks, so that both rows of shuttles are driven by a common drive.

There also exists a so-called multi-story weaving batten for different colored weft threads, with means to interchange the shuttle rows in the upward direction. Moreover, it is known how to produce simultaneously, with more than two rows of shuttles, in the upward direction, more than two ribbons, whereby the ribbons are arranged in staggered position with regard to each other so that a better oversight may be obtained.

The invention concerns an improved multi-story weaving batten or multiple shed narrow ware loom, whereby these known arrangements are partly employed, but which with three or more rows of shuttles has the warps for the weaving of multiple separate ribbons so arranged one above the others that they are largely spaced apart from one another to allow easy inspection and access thereof, a common driving rack being situated midway between the shuttles of two ribbons to be produced one above the other in the same opening of the batten.

Our invention relates particularly to improvements in the rack and pinion motion of the ribbon loom.

The drawing shows an embodiment of the improved weaving batten.

Figure 1 is a front view of a fragment thereof and Figure 2 is a vertical transverse section through a ribbon loom with such a batten and the necessary driving means.

According to the drawing, four rows of shuttles *a* are provided at four different stories of the batten. These shuttle rows are so arranged that each time two separated warps lying vertically one above the other, alternate with two separated warps lying vertically one above the other, arranged at different height, so that two ribbons lying vertically one above the other, and running

quite separately from each other, are always obtained.

For driving these four rows of shuttles, two double racks *b* with to-and-fro motion are provided, which move the shuttles in the known manner to-and-fro through the pinions. These two double racks *b* are moved to-and-fro by a common pinion *c* and they are arranged throughout the loom midway between the shuttles of two ribbons to be produced one above the other in the same opening of the batten which gives passage to the corresponding warps.

From an economical point of view, this batten has the advantage that with the same inner width of loom a larger capacity is obtained, and in consequence, a reduction in price of the ribbons, respectively, an equally large capacity can be produced with a lesser speed of loom, which is of advantage in working up artificial silk. The superimposed warps being largely spaced apart from one another, owing to the central rack drive, easy inspection and access are ensured for repairing broken warp threads. Furthermore, the number of the warp shedding healds can be considerably reduced inasmuch as each heddle twine may have several eyes for the corresponding warp threads lying vertically one above another, as shown in Figure 2, wherein the heddle twines are indicated at *d* and their eyes at *f*, whilst the different ribbons lying vertically one above another and going onto separate winding-up rollers are indicated at *g*.

Obviously, the improved batten can also be arranged to allow of a shuttle row exchange in the vertical direction for the production of multi-colored ribbons.

What we claim is:

In a multiple shed narrow ware loom, having a group of jointly operating shuttle rows with their shuttles arranged by pairs vertically one above the other, a series of batten openings each for the passage of two warp webs, a common driving bar arranged midway across said openings, a second group of jointly operating shuttle rows with their shuttles arranged by pairs vertically one

above the other, but displaced vertically and laterally with respect to the shuttle pairs of the first group, a second series of batten openings each for the passage of two warp webs, but displaced vertically and laterally with respect to the openings of the first series, a common driving bar arranged midway across the openings of the second se-

ries, and drive means positively interconnecting said driving bars to move same in opposite directions. 10

In witness whereof we have hereunto signed our names this 18th day of October, 1923.

ALFRED ARNOLD.
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