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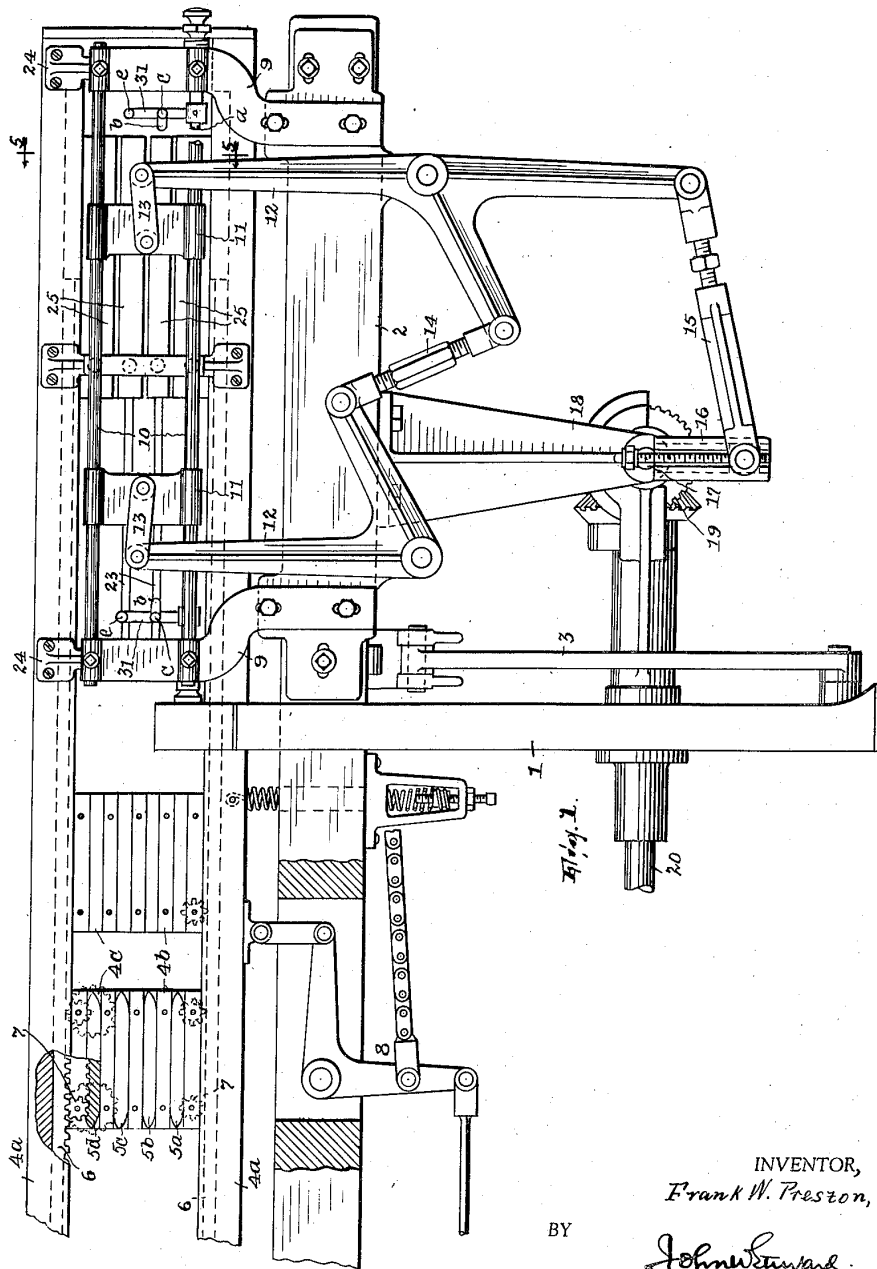
F. W. PRESTON

2,132,758

NARROW WARE LOOM

Filed April 26, 1938

2 Sheets-Sheet 1



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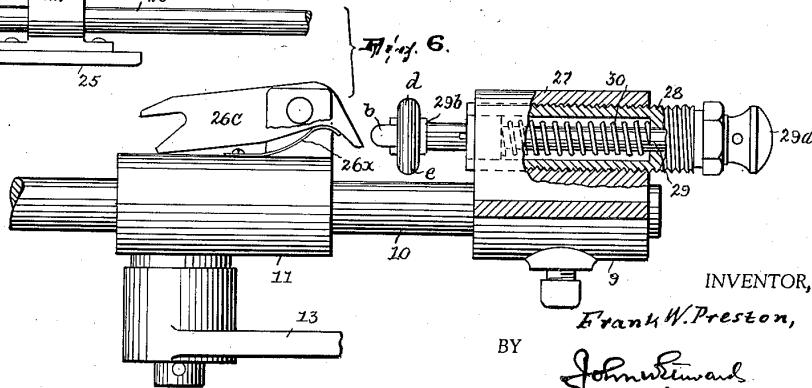
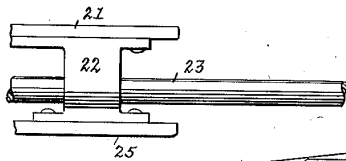
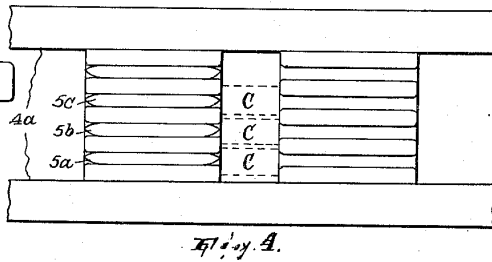
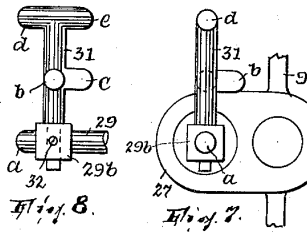
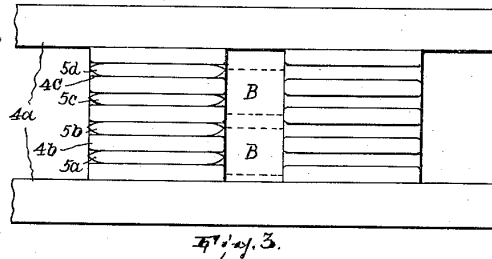
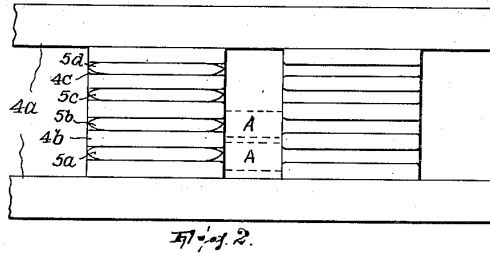
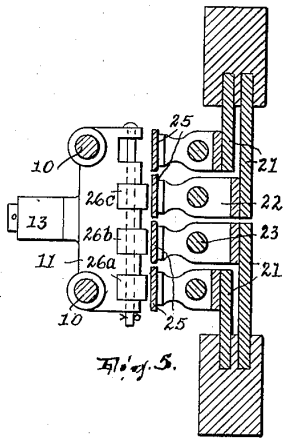
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2 Sheets—Sheet 2



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## UNITED STATES PATENT OFFICE

2,132,758

## NARROW WARE LOOM

Frank W. Preston, Paterson, N. J.

Application April 26, 1938, Serial No. 204,277

7 Claims. (Cl. 139—137)

This invention consists in improvements in the type of narrow-ware loom set forth in the Emery patent, No. 1,057,133, in which the shuttles are arranged in superposed rows or banks in an auxiliary batten structure, together with their respective racks and pinions for moving the shuttles; such batten structure is movable up or down to bring some particular shuttle-bank to the same elevation as a row or bank of warp sheds; each rack has at one end means, as a picker-plate, by which, when such particular shuttle-bank and hence the rack therefor are at said elevation, movement of the rack and hence said shuttle-bank is effected; slides, reciprocating together toward and from each other, are present having pickers to engage said means and effect such movement but being normally held in retractive position; and there are respective means related to the two slides for moving their pickers to active position when the slides move apart. In such looms, because there is only one pair of pickers, only one bank of fabrics can be woven at a time, the several banks of shuttles all serving the single bank of warp sheds (as those of one bank supplying ground weft and those of the other banks figure weft, as of different colors), but one at a time.

According to the present invention the loom as improved thereby can be made to operate the same as the said Emery loom, i. e., to weave only one bank of fabrics at a time, or it can be made to operate so as to weave two or even three fabric banks at a time. When it is weaving one fabric bank any number of the shuttle-banks may partake in the weaving, of course only one shuttle-bank at a time entering the bank of warp sheds. When it is weaving two fabrics at a time all the shuttle-banks partake in the weaving but the four shuttle-banks are active as pairs; that is, those of one pair are made respectively to pass through the two sheds and then those of the other pair, and so on, alternately. When it is weaving three fabrics at a time three shuttle-banks partake in the weaving, all passing through the three banks of warp sheds simultaneously. These possibilities exist through the use of three pickers to a slide and novel means whereby one or more of such pickers are brought into action when the corresponding slide approaches the end of its outward stroke.

In the drawings,

Fig. 1 is a front elevation, partly broken away, of one end portion of the improved loom;

Figs. 2, 3 and 4 are fragmentary elevations of the auxiliary batten structure, Figs. 2 and 3

showing two different arrangements of the warp sheds for the weaving of two fabrics at once, and Fig. 3 showing an arrangement of the warp sheds when three fabrics are woven at once, the warp sheds in all cases appearing open;

Fig. 5 is a section on line 5—5, Fig. 1;

Fig. 6 is a fragmentary plan, partly in section, of parts at the extreme right-hand end of the loom in Fig. 1, including the means by which the pickers undergo selection; and

Fig. 7 is an elevation, as seen from the left in Fig. 6, of the unit whereby the selection of the pickers is effected, and Fig. 8 a side elevation of right-hand spindle 31.

The following parts of the loom are or may be all substantially the same as in the said Emery loom: The loom-frame 1; the main batten 2 supported by lay-swords 3; the auxiliary batten structure including superposed horizontal rails 4a and spaced blocks 4b whose races 4c receive the shuttle-banks, here four in number and designated 5a—5b—5c—5d; the reciprocating racks 6 for driving the shuttles through intermediary pinions 7 in the blocks; the means 8, movable in the main batten and actuated from suitable pattern mechanism, for moving the auxiliary batten vertically; the upstanding brackets 9 affixed to said main batten and connected by the guide-rods 10; the picker slides 11 movable on the guide-rods; and the means for moving the slides together from and together toward each other comprising levers 12 fulcrumed on the main batten and linked to the slides at 13 and to each other at 14 and one of which is connected by a link 15 with a crank 16 on a shaft 17 journaled in a bracket 18 depending from the main batten and such shaft being constantly rotated through gearing 19 from a shaft 20 journaled in the frame. So, also, are or may be the plates 21 on the ends of the respective racks and having forward projections 22 sliding on guide-rods 23 carried by brackets 24 on the auxiliary batten structure, said projections carrying superposed picker-plates 25.

Now according to my invention there are three pickers 26a—26b—26c pivoted to each slide, in superposed relation and spaced (that is, from center to center) the same as are the picker-plates. And these pickers are normally held retracted (Fig. 6) by springs 26x and subject to means by which each may be brought to active position, to wit, so as to engage in its notched inner end, as in the Emery patent, the picker-plate which happens to be aligned therewith and thus move the corresponding rack and shuttle-

bank on movement of the slides toward each other. Thus:

A projection 27 on each bracket 9 has tapped into it a sleeve 28 in which is a plunger 29 having a head 29a at its outer end and normally held with said head bearing against the sleeve by a spring 30. The inner end of the plunger has a head 29b and this has a terminal stop a which projects into the path of the outer end of the picker 26a aligned therewith when the latter moves toward the same. All these parts are in effect parts of the main batten structure. Rotatively adjustable in the portion 29b is a vertical spindle 31 and this has other stops arranged as follows: A pair of lateral stops b and c projecting at right angles to each other and arranged in the same horizontal planes as the picker 26b, and a pair of lateral stops d and e projecting oppositely to each other and arranged in the same vertical plane as the stop c and in the same horizontal plane as the picker 26c. There is means, as a screw 32, for securing the spindle in any position to which it is adjusted.

When the loom is to be operated as in the Emery patent, or for the weaving of a single bank of fabrics, the spindle is so positioned that the stops b-c and d-e are inactive or out of the paths of the pickers 26b-26c as they move outward with the slides; that is, the spindle is turned so that stops d-e are in a line perpendicular to the axis of stop a and stop b projects oppositely to stop a. Then only picker 26a can be moved to active position, to wit, by stop a.

Suppose the weaving is to proceed with respect to two banks of warp sheds simultaneously, as A-A in Fig. 2 or B-B in Fig. 3. In the first of such cases the spindle is positioned as in Figs. 1 and 6, or with stop b projecting in the same direction as stop a, or so that pickers 26a and 29b will be actuated by said stops on the outward movement of the pickers with the slide; then, according as the pair 5a-5b or the pair 5c-5d of shuttle-banks has been brought into alinement with the sheds A-A so that pair will be made to partake in the weaving. In the second case the spindle is positioned as in Figs. 7 and 8, or with stop d projecting in the same direction as stop a, or so that pickers 26a and 26c will be actuated by such stops; then, according as the pair 5a-5c or the pair 5b-5d of shuttle-banks has been brought into alinement with the sheds B-B so that pair will partake in the weaving.

If it is desired to weave three fabric-banks at once, as with the use of three warp sheds C, then the spindle is so positioned that the stops c and e project the same as stop a, resulting in the "call" of pickers 26a-26b-26c by the three stops a-c-e on the outward stroke of the slide and the movement of the shuttle-banks 5a-5b-5c.

Thus by equipping the loom with the means shown at the right in Fig. 6 and in Figs. 7 and 8 the loom is adapted to the weaving of one, two or three fabric-banks at a time.

Having thus fully described my invention what I claim is:

1. The combination, with the main batten structure of a loom of the class set forth, shuttle-reciprocating means including a picker slide movable on said structure horizontally back and forth, and a picker movable on the slide and yieldingly held in inactive but movable to active position thereon, a device having a picker-moving

stop and rotatively movable on said structure to and from the position in which its stop will be in the path in which the said picker moves with the slide when the latter moves in one direction.

2. The combination, with the main batten structure of a loom of the class set forth, shuttle-reciprocating means including a picker slide movable on said structure horizontally back and forth, and two superposed pickers movable on the slide and each yieldingly held in inactive but movable to active position thereon, said structure having a picker-moving stop in the path in which one picker moves with the slide when the latter moves in one direction, a device having another picker-moving stop and rotatively movable on said structure to and from the position in which its stop will be in the path in which the other picker moves with the slide when the latter moves in said direction.

3. The combination, with the main batten structure of a loom of the class set forth, shuttle-reciprocating means including a picker slide movable on said structure horizontally back and forth, and three equally spaced superposed pickers movable on the slide and each yieldingly held in inactive but movable to active position thereon, said structure having a picker-moving stop in the path in which one picker moves with the slide when the latter moves in one direction, a device having two other picker-moving stops in the same plane and movable on said structure to and from the position in which its said stops will respectively be in the paths in which the other two pickers move with the slide when the latter moves in said direction.

4. The combination, with the main batten structure of a loom of the class set forth, shuttle-reciprocating means including a picker slide movable on said structure horizontally back and forth, and three equally spaced superposed pickers movable on the slide and each yieldingly held in inactive but movable to active position thereon, said structure having a picker-moving stop in the path in which one picker moves with the slide when the latter moves in one direction, a device having two other picker-moving stops in the same plane and rotatively movable on said structure to and from the position in which its said stops will respectively be in the paths in which the other two pickers move with the slide when the latter moves in said direction.

5. The combination set forth in claim 2 characterized by said device having its axis of rotation vertical.

6. The combination set forth in claim 4 characterized by said device having its axis vertical and lengthwise of the plane of its said stops.

7. The combination, with the main batten structure of a loom of the class set forth, shuttle-reciprocating means including a picker slide movable on said structure horizontally back and forth, and two superposed pickers movable on the slide and each yieldingly held in inactive but movable to active position thereon, said structure having a picker-moving stop in the path in which one picker moves with the slide when the latter moves in one direction, a device having another picker-moving stop and movable on the first stop to and from the position in which its stop will be in the path in which the other picker moves with the slide when the latter moves in said direction.

FRANK W. PRESTON.