

I. E. PALMER.
PROCESS OF MAKING FULLED VALANCE HAMMOCKS.
APPLICATION FILED APR. 29, 1910.

995,554.

Patented June 20, 1911.

6 SHEETS—SHEET 1.

Fig. 1.

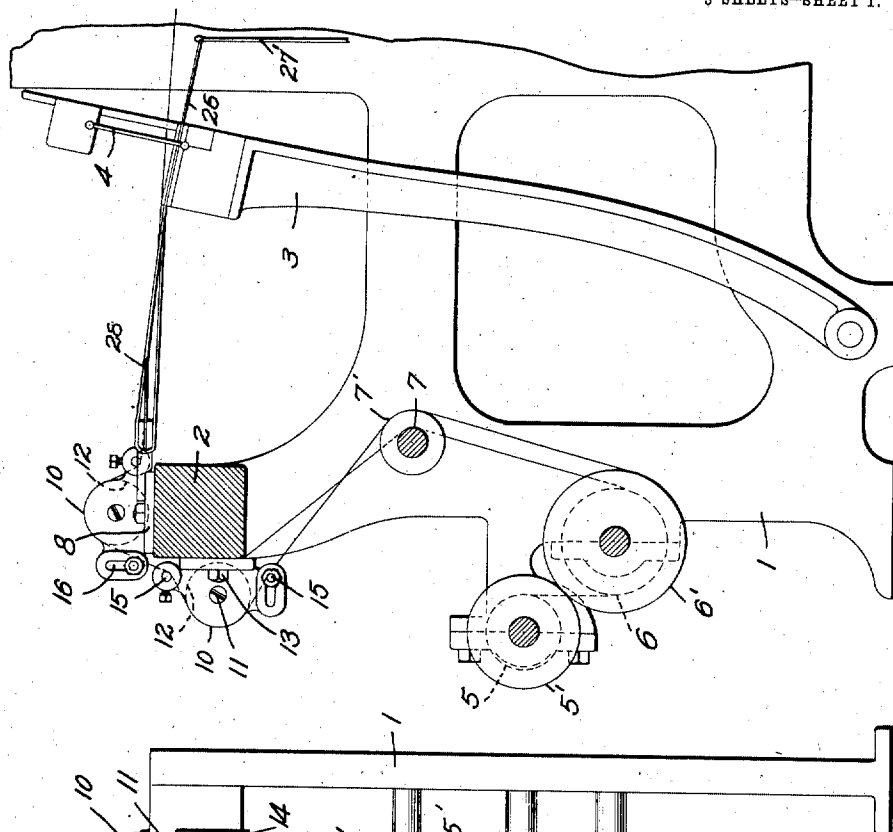
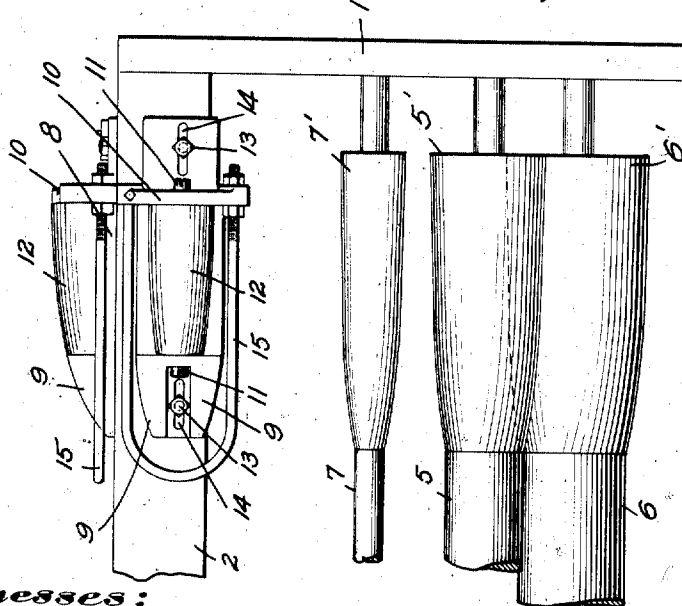


Fig. 2.



Witnesses:

Ernest A. Telfer
Carl L. Shute.

Inventor:

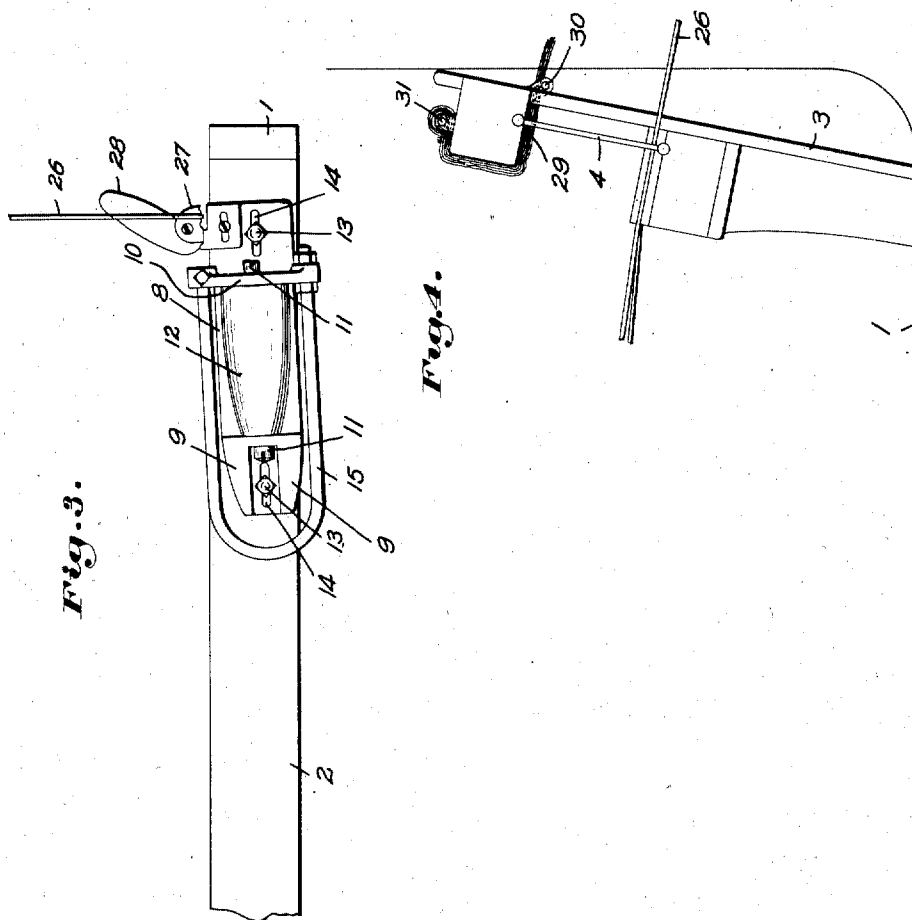
Isaac E. Palmer
by Emery, Booth, Janner & Vamey
att'ys.

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5 SHEETS—SHEET 2.



Witnesses

Ernest A. Telfer

Carl L. Choate.

Inventor

Isaac E. Palmer

by Emery, Booth, Janney & Varney,

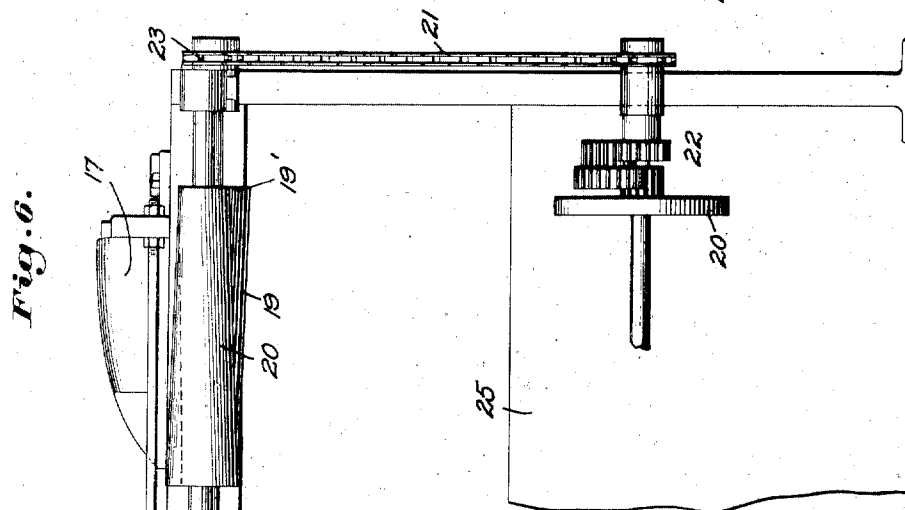
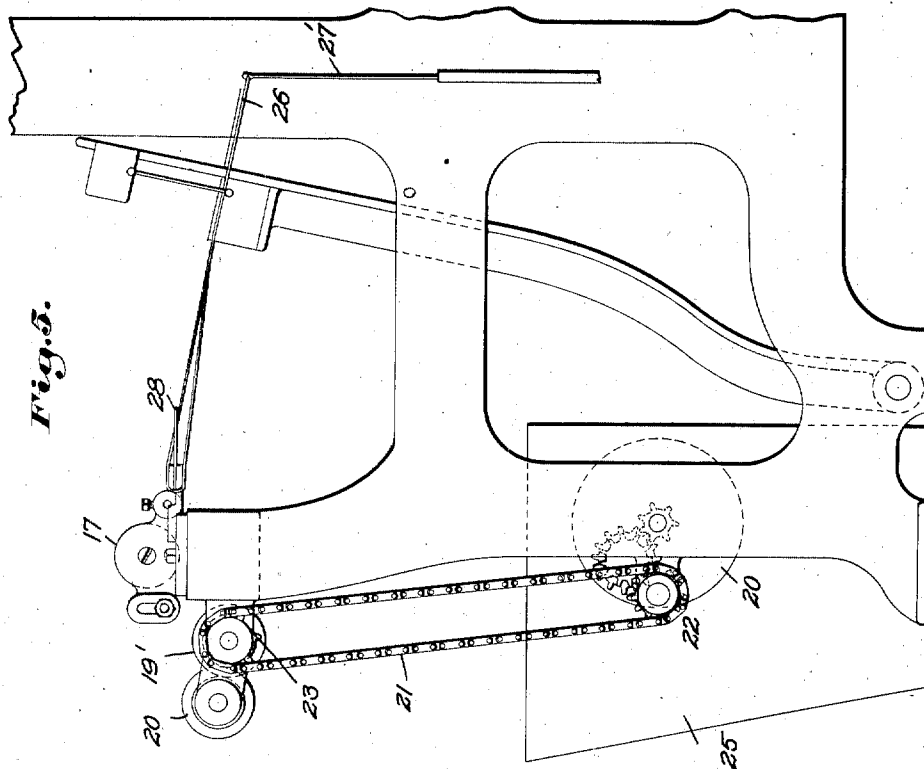
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5 SHEETS—SHEET 3.



Witnesses

Ernest A. Telfer
 Louis L. Ansart

Inventor:

Isaac E. Palmer
 by Emery, Booth, Janney & Varney
 att'ys.

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5 SHEETS—SHEET 5.

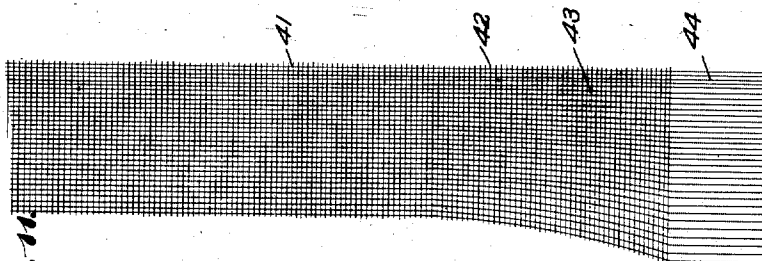


Fig. 11.

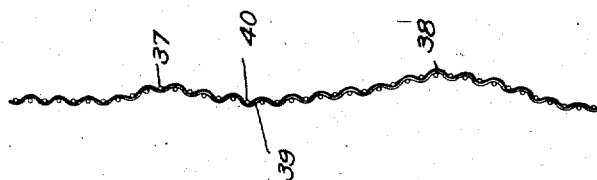


Fig. 10.

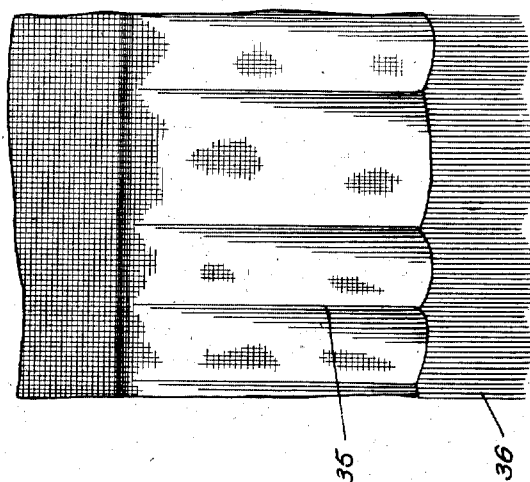


Fig. 9.

Witnesses:

Ernest A. Telfer.
Carl L. Choate.

Inventor:

Isaac E. Palmer
by Emery, Booth, Janney & Vanney
Att'ys.

UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO THE I. E. PALMER CO., OF MIDDLETOWN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PROCESS OF MAKING FULLED-VALANCE HAMMOCKS.

995,554.

Specification of Letters Patent. Patented June 20, 1911.

Application filed April 29, 1910. Serial No. 558,422.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, a citizen of the United States, and a resident of Middletown, in the county of Middlesex and State of Connecticut, have invented an Improvement in Processes of Making Fulfilled-Valance Hammocks, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to the process of making fulfilled valance hammocks.

In order that the principle of the invention may readily be understood, I have disclosed in the accompanying drawing one embodiment of means for carrying out my method and for producing the product thereof.

Fulfilled valances have been woven as distinct and separate articles of manufacture and have been thereafter sewed to the hammock body. It has long been sought to weave a hammock having integral therewith fulfilled valances, as fulfilled valances add materially to the appearance and value of the hammock and if woven integrally therewith would materially lessen the cost. I myself proposed some years ago to weave fulfilled valances integrally with the hammock, but have not been able to produce such an article until I conceived and completed the present invention.

I have herein disclosed a loom whereby I may weave a hammock having integral therewith fulfilled valances, the said loom not being herein claimed, the present application covering the method of producing such article.

I shall first describe that form of mechanism herein shown for carrying out my process.

Referring to the drawings:—Figure 1 is a vertical transverse section of sufficient parts of a loom to disclose my method; Fig. 2 is a front end elevation of a portion of the loom shown in Fig. 1; Fig. 3 is a plan view of a portion of the breast beam and one of the take-up temples shown in Fig. 2; Fig. 4 is a detail hereafter to be referred to; Fig. 5 is a view similar to Fig. 1 of a modified form of loom for carrying out my process; Fig. 6 is a view similar to Fig. 2 of said modified form of loom; Figs. 7 and 8 are

diagrammatic views illustrating respectively the manner in which I practice my method, and the manner in which I previously endeavored to practice the same; Fig. 9 is a side elevation of a portion of a fulfilled hammock valance; Fig. 10 is a longitudinal section taken through a portion of a fulfilled hammock valance; and Fig. 11 is a diagrammatic view representing a portion of a hammock body and the fulfilled valance and fringe integral therewith.

Referring more particularly to the drawings and first to the form of loom shown in Figs. 1 to 4 inclusive, the frame thereof is represented at 1, the breast beam at 2, the lay at 3 and its reed at 4. These parts may be and preferably are constructed as usual. The cloth roll is represented at 5 and the take-up roll at 6 and an intermediate guide roll at 7. These rolls are mounted as usual in the frame of the loom and driven in any suitable manner. The said rolls need not differ from rolls heretofore employed for this purpose, excepting in that they are provided with enlarged ends 5', 6', and 7'. Cloth and take-up rolls provided with enlarged ends are not in themselves new, having heretofore been employed for the purpose of taking up warp threads fed at a higher rate than the body warp threads.

In order to provide fulfilled valances integral with the hammock I feed the warp threads that are to enter into said valances from the warp beam or from supplemental beams at a higher rate of speed than I feed the body warp threads. This has heretofore been proposed, and it is therefore unnecessary to illustrate the same. Heretofore so far as I am aware in those cases where the edge warps of a fabric have been fed at a higher rate of speed than the body warps, it has simply been proposed to take up the entire mass of warp threads with the interwoven weft threads upon a take-up roll mounted in the usual position, which is substantially that indicated in Figs. 1 and 2. Such take-up and cloth rolls are positioned at points substantially remote from the fell of the cloth, and as will hereinafter be more fully set forth all attempts to take up in the usual manner a fabric having edge warps fed at a higher rate than the body warps have resulted in a distorted fabric, or the fabric has been ruptured or damaged

along the line of proposed union of the body and edge warps. This is owing to the fact that the weft threads after having been woven into the cloth are not delivered past the breast beam and onto the take-up and cloth rolls in planes or lines parallel to the fell of the cloth or more strictly speaking parallel to a plane passing through the fell of the cloth and normal to the cloth. In other words, the edge warps and the portion of the weft threads interwoven therewith are taken up so much in advance of the adjacent warp threads and their portion of the weft threads, that the entire fabric is drawn askew and distorted, and the warp and weft threads of the body no longer maintain a position normal to each other.

In accordance with my invention, I provide means for preserving substantial parallelism of each weft throughout the body and the valances with a plane normal to the cloth at its fell. Said means compels an enforced control and immediate deflection of the valance portions as they are formed, from the plane of the body, said deflection being preferably progressively greater from the edges of the body portion of the hammock to the outer edges of the valances. Inasmuch as the said means deflects the valances immediately upon weaving thereof from the plane of the body of the hammock, it will be apparent that the said deflection is substituted for a divergence of the weft threads entering into the valances, from the fell. In other words, in my previous attempts to produce a hammock having integral fulled valances I have attempted to take up those portions of the weft threads which entered into the valances by producing a divergence of them away from the breast beam and toward the cloth roll, while maintaining said portions of the weft threads in the plane of the body. This inevitably resulted in a distorted fabric,—that is, one wherein the warp and weft threads have no longer been maintained in their normal position with respect to each other, and in fact it has been substantially impossible to produce even a distorted fabric, owing to the tendency of the fabric to rupture along the proposed line of union of the edge of the body fabric and the inner edge of the proposed integral valance.

The means by which the valance as woven may be immediately deflected from the general plane of the body of the fabric may, of course, be varied. In Figs. 1, 2 and 3, I have indicated what, for convenience, I term take-up temples. These comprise castings, one of which I preferably secure to the upper face of the breast beam and another to the outer face thereof. As clearly shown, each take-up device comprises a casting 8 having upright ends 9 and 10 tapped for the passage of screws 11-11, by which is se-

cured in position a block 12 beveled upon its exposed sides outwardly toward the outer edge of the valance upon which it acts. Instead of a block I may, of course, substitute a tapered roll. Each casting is secured to the breast beam by bolts or screws 13 passing through slots 14 in said castings. If desired, I may provide a substantially U-shaped guide rod 15 having its ends secured as shown in the upright portion 10 of the casting, the cloth as woven passing under that portion of the guide rod which is adjacent the fell of the cloth, then over the adjacent beveled block 12, and then under the other portion of the guide rod 15. If desired, I may slot, as indicated at 16, that portion of the upright 10 in which one or both ends of the guide rod 15 are secured.

Viewing Fig. 1, it will be apparent that immediately upon formation of the fabric at the fell thereof, the body portion, being that part embraced between the inner edges of the valances, passes onto the level portion of the breast beam, while the valances are at once deflected upwardly from the plane of the body part, so as to take up the fulled portions. This outward deflection prevents those portions of the weft threads which have been incorporated in the valances from being drawn by the take-up and cloth rolls into advance of the remaining portion of said weft threads; that is, the portion which is incorporated with the body of the hammock. In other words, each weft thread is maintained throughout its entirety in substantial parallelism with a plane passing through the fell of the cloth normal thereto. This deflection of the valance as woven is continued by the second take-up temple illustrated in Figs. 1 and 2, and the roll 7 with enlarged ends is placed sufficiently near the second take-up temple to prevent the distortion to which I have referred. Preferably, however, I interpose between the take-up temples and the roll 7 or between the second take-up temple and the take-up and cloth rolls, suitable devices to continue action of the take-up temples.

In Figs. 5 and 6, I have shown a slightly modified form of my invention wherein upon the breast beam itself are mounted one or more take-up rolls. Preferably in this construction I employ a single pair of take-up temples, one of which is indicated at 17 and in conjunction therewith employ take-up rolls 19, 20, the roll 19 having enlarged beveled ends 19' and the roll 20 having ends of correspondingly reduced diameter, so that contact throughout their entire extent may be had between the rolls 19, 20. Preferably the roll 20 is a sand roll. These rolls may be driven in any suitable manner, as, for example, by a sprocket chain 21 from the usual take-up driving mechanism 22, the said sprocket chain 21 engaging a sprocket gear 130

23 upon the shaft of the take-up roll 19, the take-up roll 20 being frictionally driven from the roll 19.

In the operation of the form of the invention shown in Figs. 5 and 6, the integral valances are deflected from the body of the hammock as woven and after being so taken up the product may be discharged from the second take-up roll 20 into a convenient receptacle 25 upon the floor beneath the breast beam, it being noted that the fulled valances pass first over the temple take-ups 17 and thence about the rolls 19 and 20.

In the production of a fulled valance hammock, I preferably fashion a fringe also integral with the body. This I preferably accomplish by providing at the outer edge of each valance portion of the hammock a wire 26 (see Fig. 3), said wire extending as shown in Fig. 1 through a suitable dent of the reed 4, beyond which it is suitably connected to a cord 27 of the jacquard as indicated. The wire 26 may be held in position by being looped about a bracket 27 secured as indicated in Fig. 3 to the frame of the take-up temple positioned upon the upper face of the breast beam. The weft threads as laid by the shuttle pass alternately under and over the said wires 26 at each edge of the fabric, thus forming looped fringes. Preferably these loops are severed during the progress of the weaving and to that end I provide knives 28 positioned between the members of each wire 26 and outwardly inclined as indicated to sever the looped fringes as the same are drawn past the knives.

It not infrequently is desirable to change the production of the loom from a hammock having integral fulled valances to hammock bodies without valances, or to pillow fabrics. Therefore, I may interrupt weaving of the valances. This may readily be effected by severing the valance warp threads between the reed and the fell of the cloth and securing said severed threads in suitable manner to the lay, so that in the progress of the weaving they may be loosely carried back and forth by the lay. In Fig. 4, I have indicated a few of such severed warp threads at 29, said threads being preferably grouped into a series of bunches and passed under a rod 30 secured to the lay and then passed to a rod 31, to which they may be loosely knotted. When it is again desired to weave valance hammocks, the severed threads may be readily incorporated into the fabric and the weaving continued.

In Figs. 7 and 8, I have diagrammatically indicated my method for weaving a hammock having integral therewith a fulled valance. I have contrasted therewith a diagrammatic illustration of an utterly impracticable scheme, heretofore suggested by me for weaving a hammock with integral

fulled valance. As represented in Fig. 7, the weft threads 32 are continued into the valance at 33 and immediately after each weft is beaten up at the fell of the cloth, it is deflected from the plane of the surface of the body fabric to preserve the described parallelism of the weft threads with said fell of the cloth. In so deflecting the valance portions of the fabric, the take-up lines of strain of the valance are either parallel with the warp threads or are so nearly parallel therewith as indicated, that said lines of strain do not enter the body portions of the fabric nor distort the same. In the case of the construction shown in Fig. 8, however, wherein the take-up and cloth rolls are remote from the fell of the cloth, the lines of strain of the proposed valance penetrate the body fabric so deeply as indicated, as to distort the same in the taking up thereof. In other words, not only would the portions of the weft threads which enter into the valances be taken up more rapidly, but this strain of advanced take-up does not terminate at the line of union of the body and the valances, and consequently portions of the weft threads which are in the body but adjacent the valances are drawn ahead of the remaining or central portions of the weft threads in the body, and hence the whole fabric is drawn askew at and adjacent its edges.

Preferably I incorporate with the valances and substantially at the point of union of the valances with the body fabric a strengthening cord or grouped warp threads 34. This strand or group of warp threads serves to strengthen the line of union of the fulled valance and the body as well as to add to the appearance thereof.

In Fig. 9, I have illustrated in side elevation a portion of the fulled valance integrally woven with the hammock, the folds which in actual practice hang irregularly being represented at 35 and the integral fringe at 36. In Fig. 10, I have illustrated a section taken longitudinally through one of the valances and have indicated at 37 and 38 the fulled valance effect. In said figure, the warp threads are represented at 39 and the weft threads at 40.

In Fig. 11, I have indicated diagrammatically a portion of a hammock body and its integral valance and fringe. Therein the weft threads are indicated at 41 and certain of the warp threads at 42. It will be observed that the weft threads are in parallelism throughout the body portion of the fabric, but that as they enter the valance, as represented at 43, they are very slightly inclined forwardly, owing to the fact that the valance warp threads are fed from the warp beam or supplemental warp beams at a higher rate of speed than the body warp threads. This, however, does not disturb the

approximate parallelism to which I have referred; that is, to the maintenance of each weft thread throughout its entirety in substantial parallelism with a plane passing through the fell of the cloth normal thereto. The integral fringe is represented at 44.

From the foregoing description, it will be apparent that by the disclosed means, I am enabled to produce a wholly new article, namely, a hammock having integral therewith full valances. This hammock is produced by the described process, but said hammock is not claimed in this application.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. That method of weaving a hammock with integral full valances, which consists in assembling a central series of warp threads to form the hammock body and two side series of warp threads to form the valances; interweaving a series of weft threads with said three series of warp threads; during such interweaving presenting the said side series of warp threads to the weft threads for the incorporation of the latter, at a faster rate than the central series is presented thereto; and substantially immediately upon the described incorporation of each weft thread taking up the slack caused by the faster presentation of the side series of warp threads by deflection of the interwoven portion of such side series of warp threads and weft threads in a direction which maintains all of said threads substantially taut and also preserves said incorporated weft threads throughout substantially their entire extent at substantially right angles with the warp threads of the said three series of warps; whereby the warp and weft threads throughout the entire hammock are maintained at substantially right angles to each other throughout their extent.

2. That method of weaving a hammock with integral full valances, which consists in assembling a central series of warp threads to form the hammock body and two side series of warp threads to form the valances; interweaving a series of weft threads with said three series of warp threads; prolonging said weft threads at one or both sides in loops beyond the side series of warp threads to form fringes; during such interweaving, presenting the said side series of warp threads to the weft threads for the incorporation of the latter at a faster rate than the central series is presented thereto; and substantially immediately upon the described incorporation of each weft thread

taking up the slack caused by the faster presentation of the side series of warp threads by deflection of the interwoven portion of such side series of warp threads and weft threads in a direction which maintains all of said threads substantially taut and also preserves said incorporated weft threads throughout substantially their entire extent at substantially right angles with the warp threads of the said three series of warps; whereby the warp and weft threads throughout the entire hammock are maintained at substantially right angles to each other throughout their extent.

3. That method of weaving a hammock with integral full valances, which consists in assembling a central series of warp threads to form the hammock body and two side series of warp threads to form the valances; interweaving a series of weft threads with said three series of warp threads; prolonging said weft threads at one or both sides in loops beyond the side series of warp threads to form fringes; during such interweaving, presenting the said side series of warp threads to the weft threads for the incorporation of the latter at a faster rate than the central series is presented thereto; and substantially immediately upon the described incorporation of each weft thread taking up the slack caused by the faster presentation of the side series of warp threads by deflection of the interwoven portion of such side series of warp threads and weft threads in a direction which maintains all of said threads substantially taut and also preserves said incorporated weft threads throughout substantially their entire extent at substantially right angles with the warp threads of the said three series of warps; whereby the warp and weft threads throughout the entire hammock are maintained at substantially right angles to each other throughout their extent; and severing the bights of said fringe loops to complete the fringes.

4. That method of weaving a hammock with integral full valances which consists in interweaving warp and weft threads to form the hammock body and simultaneously extending said weft threads beyond the body portion and interweaving them with supplemental warp threads to form integral valances, and preserving the substantial parallelism of each weft thread throughout the body and valances, with a plane normal to the cloth at its fell.

5. That method of weaving a hammock with integral full valances which consists in interweaving warp and weft threads to form the hammock body and simultaneously extending said weft threads beyond the body portion and interweaving them with supplemental warp threads to form integral valances, and compelling a controlled and

immediate deflection from the plane of the body, of the valance portions as formed.

6. That method of weaving a hammock with integral fulled valances which consists in interweaving warp and weft threads to form the hammock body and simultaneously extending said weft threads beyond the body portion and interweaving them with supplemental warp threads to form integral valances, and compelling a controlled and immediate deflection from the plane of the fabric, progressively greater outward from the body edges, of the valance portions as formed.

7. That method of weaving a hammock with integral fulled valances which consists in interweaving warp and weft threads to form the hammock body and simultaneously extending said weft threads beyond the body portion and interweaving them with supplemental warp threads to form integral valances, and drawing the threads of the valances at the fell of the cloth outward from the plane of the body, thereby immediately to take up said fulled valances.

8. That method of weaving a hammock with integral fulled valances, which consists in assembling a central series of warp threads to form the hammock body and two side series of warp threads to form the valances, the warp threads of said side series being progressively longer toward the outer edges of said series than the warp threads of the central series; interweaving a series

of weft threads with said three series of warp threads and substantially simultaneously with the described incorporation of each weft thread taking up the slack in that portion of the woven product wherein such weft thread is incorporated with the longer warp threads, by deflecting the interwoven portion of such warp and weft threads away from the plane of the interwoven body portion of the hammock while still preserving the interwoven warp and weft threads at substantial right angles to each other throughout substantially their entire extent.

9. That method of weaving a hammock with integral fulled valances, which consists in interweaving warp and weft threads to form the hammock body and simultaneously extending said weft threads beyond the body portion and interweaving a part only of the extended portion of said weft threads with supplemental warp threads, whereby are formed valances and fringes integral with the hammock body, and preserving the substantial parallelism of each weft thread throughout the body and valances with a plane normal to the cloth at its fell.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ISAAC E. PALMER.

Witnesses:

CHAS. M. SAUER,
H. W. SIMONDS.