Dec. 29, 1970 A. L. KOTLER 3,550,166

HAMMOCK-STRINGING METHODS AND ASSEMBLIES

Filed Sept. 24, 1968

Fig. 1

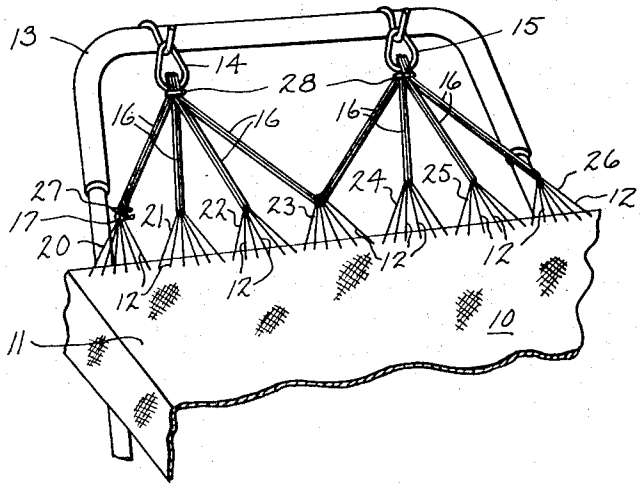



Fig. 2

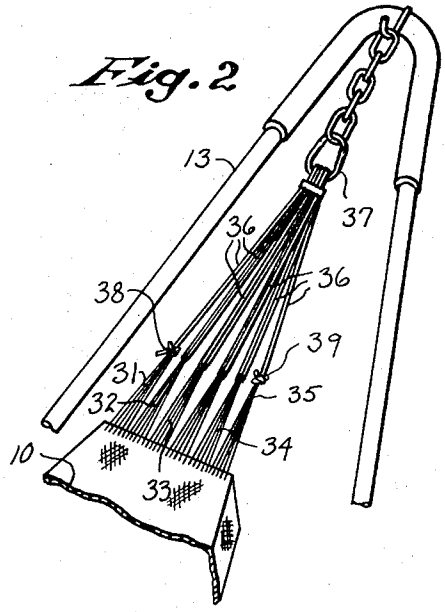



Fig. 3

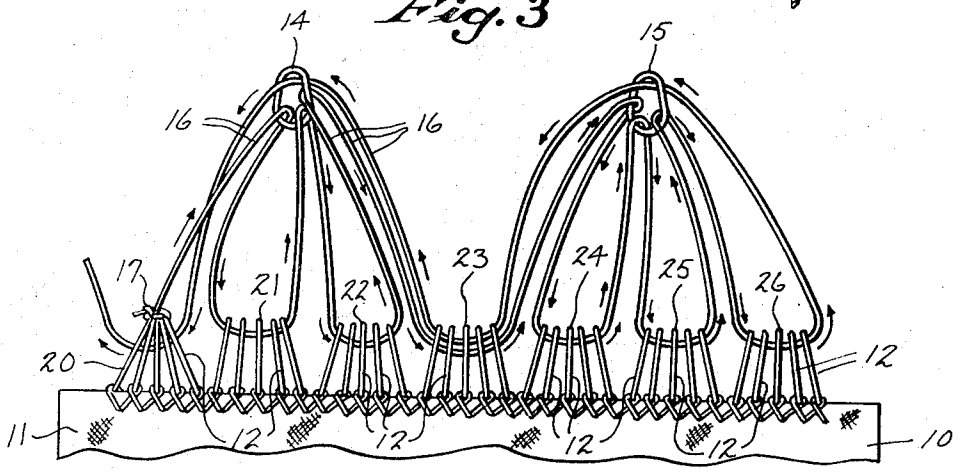



Fig. 4

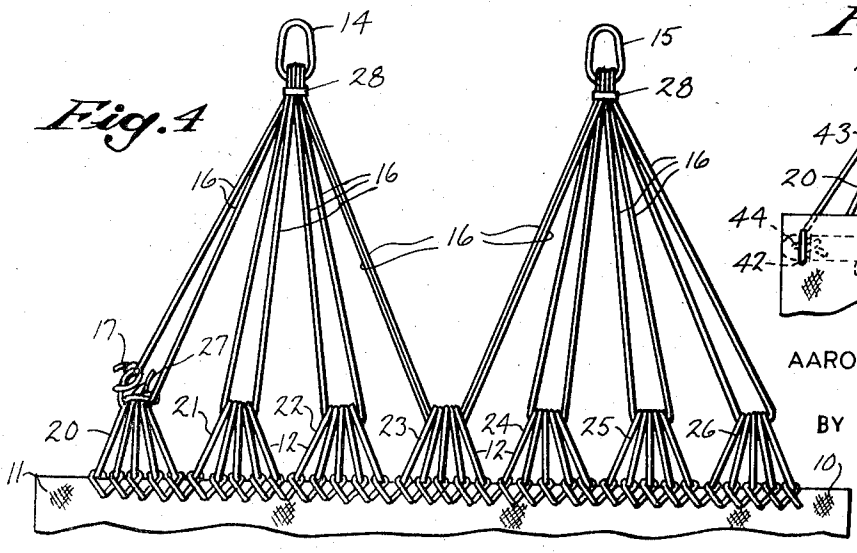
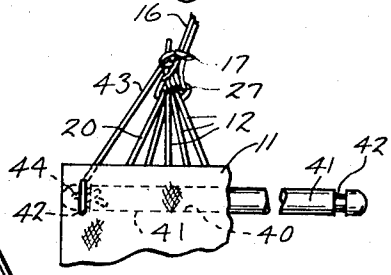



Fig. 5

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United States Patent Office 3,550,166 Patented Dec. 29, 1970



3,550,166

# HAMMOCK-STRINGING METHODS AND ASSEMBLIES

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Filed Sept. 24, 1968, Ser. No. 761,937
Int. Cl. A45f 3/22
U.S. Cl. 5—122 1 Claim

## ABSTRACT OF THE DISCLOSURE

A plurality of stringing loops formed on and across the end of a hammock bed are gathered together in a plurality of spaced groups or sets through which an elongated cord is strung, said cord being inserted through a supporting ring or other cord-engaging element carried by the hammock stand after passing through each of said sets of stringing loops. Thus there is provided a single-cord stringing assembly which results in increased speed and efficiency in the stringing operation, as well as providing a supporting assembly which is self-adjusting to ensure that a weight on the hammock bed is borne uniformly by all of said stringing loops.

## BACKGROUND OF THE INVENTION

### Field of the invention

The present invention relates to the art of manufacturing and assembling hammocks, and more particularly to stringing assemblies for hammocks.

### Description of the prior art

In most conventional hammocks of the type employing stringing loops formed on and across the head and foot ends of the hammock bed, the common method of securing said bed to the stand or other support is to arrange said stringing loops in adjacent sets and to tie an individual cord to each of said sets and to a ring or the like carried by the supporting stand. One of the disadvantages of such conventional stringing arrangement, however, is that said connecting cords are frequently slightly uneven in length, especially after they are tied, with the result that when a person lies on the hammock some of the stringing loops are taut and support all of the weight while others bear none of the load. As a consequence the wear on said supporting strings is uneven and it has been found that such conventional stringing assemblies break after a relatively short time and must be frequently replaced. In addition, the uneven weight distribution can affect the stability of the bed.

Another disadvantage of the above-described conventional hammock-stringing method is that the manual tying of individual cords to each of the multiple sets of stringing loops, and to the supporting ring or rings carried by the stand, is a time-consuming and tedious job that adds to the manufacturing cost of the hammock.

## SUMMARY OF THE INVENTION

The present invention provides a new and improved hammock-stringing method and assembly wherein a single elongated supporting cord is strung back and forth through spaced groups or sets of stringing loops formed on and across the end of the hammock bed, and through a ring or rings carried by the hammock stand or other support, which single cord arrangement not only speeds and facilitates the stringing operation and reduces the manufacturing cost of the hammock, but which assembly permits said stringing loops to shift position in response to a load on the bed to provide self-centering means for ensuring said load is borne uniformly by all of the loops, thereby



greatly increasing the life of said stringing assembly as well as enhancing the stability of the bed.

A further object of the present invention is to provide a novel stringing assembly utilizing a single elongated supporting cord, as described, which cord is designed to be strung back and forth between the stringing loops and the supporting ring or rings in a manner whereby double cord strands extend between each of said sets of stringing loops and said rings to provide increased strength and support.

A further object of the invention is to provide a novel stringing method and assembly that can be utilized with supporting rings of either the open or closed variety, thereby increasing the versatility and utility of the hammock bed.

A further object is to provide a hammock-stringing assembly as described wherein the stringing loops and coacting loop-engaging cord are formed of different materials which are compatible to minimize friction and wear between said relatively movable elements, thereby further increasing the life of the stringing assembly.

A further object of the invention is to provide a novel and improved hammock-stringing method and assembly as described wherein the stringing loops are formed of nylon or similar material having sufficient inherent stiffness to permit said loops to be readily manually grasped and held in position for the projection of the supporting cord therethrough during the stringing operation.

A further object of the invention is to provide a novel hammock-stringing method and assembly including means for effectively securing the hammock bed to a spreader bar to prevent said bed from shifting on the bar and bunching at the center thereof, as commonly occurs with conventional hammock-supporting assemblies.

Still further objects of the present invention are to provide a new and improved hammock-stringing method and assembly which is simple, which is reliable in use, which is attractive in appearance, and which is otherwise particularly well adapted for its intended purposes.

With the above and other objects and advantages in view, which other objects and advantages will become apparent hereinafter, the invention comprises the improved hammock-stringing method and assembly hereinafter described and also any and all variations or modifications thereof as may come within the spirit of said invention, and within the scope of the claims appended hereto.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, wherein the same reference numerals designate the same parts in all of the views:

FIG. 1 is a fragmentary perspective view of the head end of a hammock featuring the improved stringing assembly;

FIG. 2 is a fragmentary perspective view of the foot end of a hammock incorporating the invention;

FIG. 3 is an enlarged elevational and diagrammatic view illustrating the novel stringing method;

FIG. 4 is a similar elevational view with the stringing assembly completed; and

FIG. 5 is a fragmentary elevational view of the head end of a hammock bed showing the means included in the present invention for securing the bed in position on a spreader bar.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to FIG. 1 of the drawings, illustrated therein is a hammock bed **10** the head end **11** of which is provided with a plurality of substantially-equally spaced stringing loops **12** which are

preferably machine sewn thereto. In the preferred form of the present invention said stringing loops **12** are formed of nylon or a similar synthetic in lieu of the cotton string or twine ordinarily used, the purpose of which will be hereinafter seen. The number of said stringing loops **12** formed across the bed, and the spacing therebetween, can be varied depending upon the width and style of the hammock and the invention is not to be limited in this respect.

In the hammock illustrated in FIG. 1 the bed **10** is suspended between the ends of a unitary tubular metal frame **13**, but it is to be understood that said bed could be suspended between two trees or any other suitable spaced supports. Carried by said frame **13**, or other support, are a pair of spaced cord-receiving elements such as the oval-shaped steel rings **14** and **15**, and extending between said rings and the stringing loops **12** is the novel one-piece supporting cord **16** featured in the present invention. Said cord **16** is preferably formed of Dacron or other suitable synthetic different from the material used for the stringing loops **12**, the purpose of which will be hereinafter described, and the length of said cord is dependent upon the width of the particular bed and can be varied as required.

Referring now to FIG. 3 of the drawings, in accordance with the novel stringing method comprising the present invention a predetermined number of the stringing loops **12** adjacent one edge of the hammock bed (on the left in the drawing) are manually gathered together in an upwardly converging group or set **20**, the number of loops in the set depending upon the width of the bed and the number of sets intended to be formed thereacross. It is preferred to form an odd number of loop sets, the purpose of which will become apparent hereinafter. As mentioned, said stringing loops **12** are formed of nylon or other semi-stiff synthetic material, thereby permitting the person assembling the hammock to readily insert a finger through a predetermined number of loops to position the same to receive the cord **16**, as will be described. This is in contrast to conventional cotton twine stringing loops whose total lack of rigidity causes said loops to fall over at random and makes the grasping and arrangement of the same in sets relatively difficult. The result is that said nylon stringing loops are not only substantially more durable and long-lasting than the cotton twine loops heretofore used, but they increase the speed and efficiency of the stringing operation.

The end of the cord **16** is then tied to said first group or set **20** of stringing loops by means of a knot **17**, and said cord is drawn upwardly through the first ring **14** carried by the hammock stand or other support. With respect to said supporting rings **14** and **15**, incidentally, with the present stringing assembly said rings can be of either the open or closed variety, thereby permitting the use of the bed with a variety of existing hammock units and increasing the versatility of said bed. Moreover, it is to be understood that other cord-receiving elements could be used in lieu of said rings without departing from the spirit and scope of the present invention.

After passing through the ring **14** the elongated cord **16** is inserted through a second set **21** of stringing loops **12** which are similarly manually collected and held in position to receive the same, said cord passing freely through said loops without being tied or otherwise secured thereto. The cord is then drawn upwardly through the ring **14** again, thereby providing dual cord strands extending between said second stringing loop set **21** and the supporting ring.

The cord **16** is next carried downwardly and inserted freely through a third set **22** of stringing loops, and is then projected upwardly through the ring **14**. Again dual cord strands **16** are provided between said ring and the stringing loops.

After passing through the ring **14**, the cord **16** is directed downwardly again and is projected through a set **23** of stringing loops located intermediate the width of the bed, said cord then being strung upwardly through the second supporting ring **15**.



Next said cord **16** is directed downwardly through the adjacent loop set **24**, and is passed upwardly through the ring **15** to provide double cord strands therebetween. The next loop set **25** is similarly threaded by the cord **16**, and after being again drawn through the ring **15** said cord is directed downwardly through the end loop set **26** and back upwardly through said ring.

Referring still to FIG. 3, after being inserted through the end stringing loops **26** and supporting ring **15** the cord **16** is drawn downwardly through the intermediate stringing loop set **23**, thence upwardly through the first ring **14**, and downwardly again through the first loop set **20**, where it is tied to said stringing loops by a knot **27** (FIG. 4). By returning the cord to the first set **20** of stringing loops in the manner described dual cord strands are provided between the intermediate stringing loop set **23** and both of the rings **14, 15**, as well as between said ring **14** and the first loop set **20**. Thus a double supporting strand arrangement is provided across the entire width of the hammock bed for maximum strength and dependability. To enhance the appearance of the unit, as well as to prevent the cord from tangling, ornamental plastic or tape collars **28** can be secured around the converging cord strands immediately beneath the rings **14, 15** (FIGS. 1 and 4).

With reference now more particularly to FIG. 4 of the drawings, after the elongated cord **16** has been alternately woven back and forth through the stringing loop sets **20–26** and supporting rings **14, 15** and tied as described, any tension or load on the bed will cause said stringing assembly to assume a taut condition. Moreover, due to the fact that the solitary supporting cord **16** is tied at only one side of the hammock, and the other stringing loops are freely slidable thereon, said loop sets will automatically shift on said cord in response to a load on the hammock to ensure the bed will be centered and that the load will be borne equally by all of said stringing loops. The result is even and uniform wear which substantially increases the life of the stringing assembly. As hereinabove mentioned, in conventional stringing arrangements wherein individual cords are tied between each set of stringing loops and the supporting rings deviations in the lengths of said cords is almost unavoidable due to one knot being tied tighter than the next, as well as other factors, and an unequal distribution of the load among said loop sets results which causes uneven wear and relatively rapid deterioration of the stringing assembly.

In FIG. 2 of the drawings there is illustrated the foot end **30** of a hammock featuring a slightly modified version of the novel and improved stringing method and assembly comprising the present invention. Said bed foot end includes a plurality of stringing loops **12** arranged in adjacent groups or sets **31–35**, the number of sets and loops therein depending upon the width of the hammock, and a single cord **36** is tied to the first set by a knot **38** and strung backwardly and forwardly through said loop sets and a single supporting ring **37** carried by the hammock stand **13**. Because the foot end of a hammock bed is not ordinarily required to support as much weight as the opposite end it has been found that it is not essential to provide dual cord strands across the entire width of the bed foot end. Consequently, said cord **36** is merely tied off at the last loop set **35** by means of a knot **39**, rather than being directed back through the supporting ring and tied to the first loop set as in the form of the invention illustrated in FIGS. 3 and 4. It is to be understood, however, that with hammock-lounges, as well as many other styles of hammocks, it might be preferred to utilize the complete dual-strand stringing arrangement shown in FIGS. 3 and 4 at both the head and foot ends of the bed, and the invention is not to be limited or confined in this respect.

As hereinabove mentioned, in accordance with the prefered embodiment of the present invention the stringing loops **12** are formed of nylon while the coacting cord **16** is formed of Dacron or other dissimilar synthetic, said materials being substantially stronger and more durable than the cotton twine utilized in conventional hammock-stringing assemblies and the relatively stiff nature of such nylon stringing loops speeding and facilitating the stringing operation. In addition it has been found that by using two dissimilar materials the frictional wear and cutting action between said relatively movable loop and cord elements is minimized. Moreover, there is little or no undesirable "slipping" between said elements such as occurs when they are formed of the same material.

With reference now to FIG. 5 of the drawings, in addition to the several important advantages and features hereinabove enumerated, the novel stringing assembly comprising the present invention also includes means for maintaining the head end of the hammock bed **10** in a smooth, spread position. As is well known in the art, a rigid so-called spreader bar such as the bar **41** is commonly inserted in the hem **40** or otherwise affixed transversely across the head end of the fabric or canvas hammock bed to maintain said bed in a spread condition for the convenience and comfort of a person lying thereon. Unfortunately, however, it frequently happens that the bed material shifts on the spreader bar and bunches up toward the middle, which is undesirable.

To remedy this situation, in accordance with the present invention an annular groove **42** is formed adjacent each end of the spreader bar **41**, and short supplemental cords **43** are tied to the end sets of stringing loops **12**. One end of the cord is then sewed through the material from the bottom out through the top side and back again through the material from the top to the bottom, making sure the cord is in position to force the bed material into said groove **42** in the spreader bar. The second end of the cord is then sewn in the same way, but in the opposite direction, thus providing two free ends which are tied in a knot **44** on the underside of the bed. The same procedure is followed at the opposite end of the spreader, thereby providing a simple but effective arrangement whereby the opposite edges of the bed are positively joined to the ends of the spreader bar, and said bed material cannot shift or bunch up on the bar.

From the foregoing detailed description it will be seen that the present invention provides a novel and improved stringing method and assembly having a number of advantages over the stringing means heretofore employed in the manufacture of hammocks. In accordance with the present invention there is provided a new and improved hammock-stringing method and assembly wherein a single elongated supporting cord is utilized in lieu of the multiple cord arrangement employed in conventional stringing assemblies, which single cord arrangement speeds the stringing operation and reduces the manufacturing cost of the hammock. In addition, because the stringing loops are freely engaged on said cord they are self-centering to ensure a load on the hammock is borne uniformly by all of said loops, thereby greatly increasing the life of said assembly as well as enhancing the stability of the bed.

Further advantages of the present invention are that the single stringing cord can be arranged to form double supporting strands for increased strength and support, and said stringing assembly can be utilized with either open or closed-style supporting rings. In addition, said cord and the associated stringing loops are formed of different materials to minimize friction and wear, and the greater degree of stiffness and rigidity of said stringing loop material facilitates the manual grasping and arranging of said loops in sets to increase the speed and efficiency of the stringing operation in comparison to conventional stringing methods.

Still further advantages of the present invention are that the improved stringing method and assembly is simple, it is reliable, and it is attractive in appearance.



It is to be understood that while a preferred embodiment of the present invention has been illustrated and hereinabove described, numerous variations or modifications will undoubtedly occur to those skilled in this art. What is intended to be covered herein, therefore, is not only the illustrated form of the invention but also any and all variations or modifications thereof as may come within the spirit of said invention, and within the scope of the following claims.

What I claim is:

1. In a hammock unit including a pair of cord-engaging elements comprising spaced first and second rings carried by a support, and a hammock bed having an end adjacent and spaced from said cord-engaging elements, the improved stringing assembly comprising: a plurality of stringing loops projecting from said bed end across substantially the entire width thereof, said loops being formed of a synthetic material characterized by a degree of rigidity permitting said loops to be easily manually grasped and manipulated during the stringing operation, and said individual stringing loops being gathered together in an odd number of spaced sets with the center loop set located intermediate the width of the bed with one of said cord-engaging rings located on each side of said center loop set; a single elongated support cord formed of a synthetic material different than the material from which said stringing loops are formed secured to the first stringing loop set at one side of said bed and freely slidably strung back and forth consecutively between the first cord-engaging ring and the stringing loop sets on that side of said center loop set, thence freely slidably strung through said center loop set and consecutively back and forth between the second cord-engaging ring and the stringing loop sets on the other side of said center loop set, and wherein after passing through the last loop set said cord is directed in the opposite direction back through said second ring, through the center loop set, thence through the first ring, and is finally passed through and tied to said first stringing loop set, thereby providing double cord strands between said rings and all of said stringing loop sets, the dissimilar materials from which said support cord and stringing loops are formed promoting the free relative sliding movement of said loop sets on the cord and promoting the shifting self-adjustment of said stringing assembly to accommodate a load on the bed and to ensure substantially equal distribution of the load forces among said plural loop sets; a spreader bar extending across said bed adjacent the end thereof, said spreader bar having an annular groove formed therein adjacent each end thereof; and a relatively short length of supplemental cord secured to the stringing loop set at each side of the hammock, each of said supplemental cords having first and second ends sewn through said bed and arranged in opposite directions tightly around said spreader bar in a manner to clampingly retain the bed material in the adjacent spreader bar annular groove to prevent shifting or bunching of said bed material at the center of the bar, and said supplemental cord ends being tied on the underside of said bed.


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