2 Sheets—Sheet 1.

E. F. HANKS.

Hammock.

No. 202,814. Patented April 23, 1878.

Fig. 1.

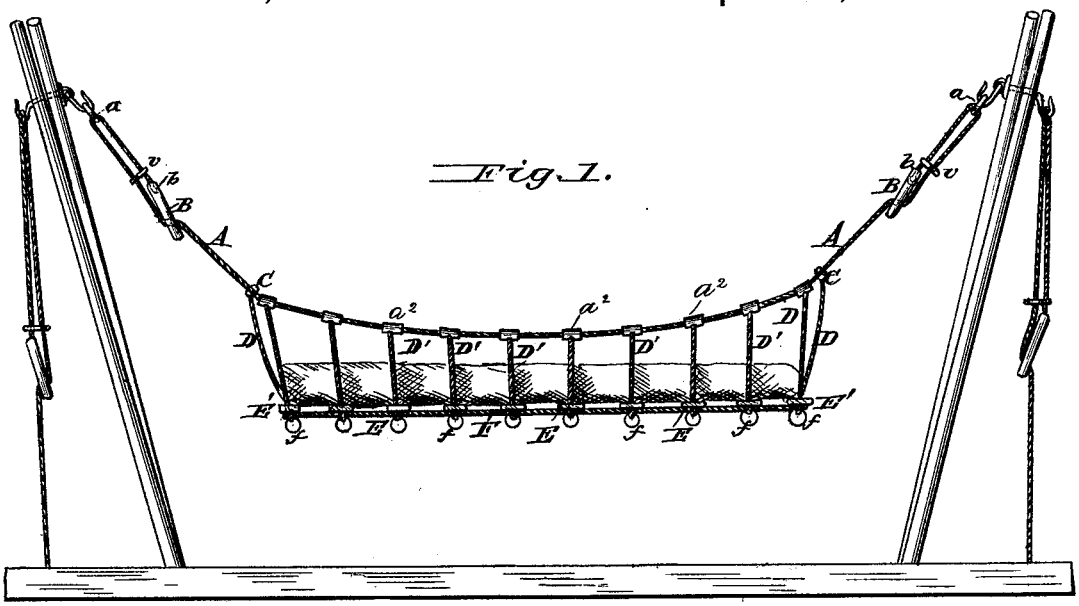


Fig. 2.

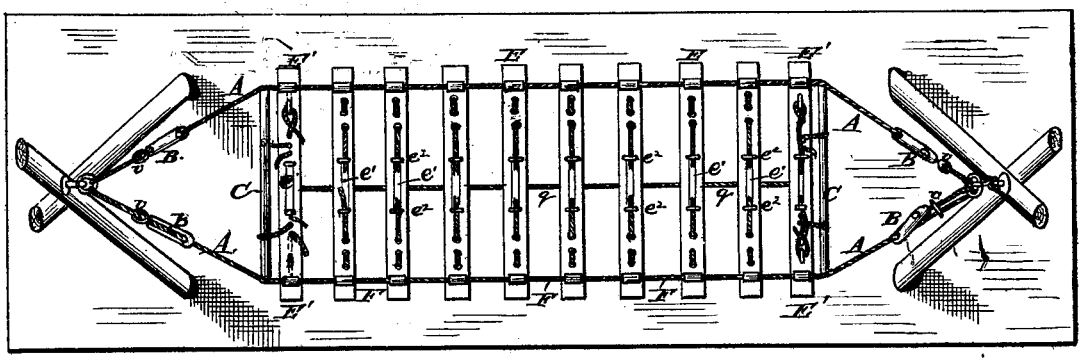


Fig. 3.

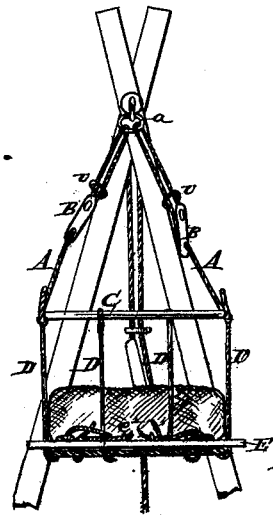
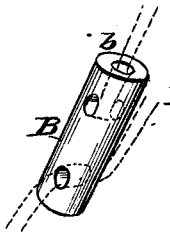


Fig. 3a.



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By. James L. Norris.
Atty

2 Sheets—Sheet 2.

E. F. HANKS.

Hammock.

No. 202,814. Patented April 23, 1878.

Fig 4.

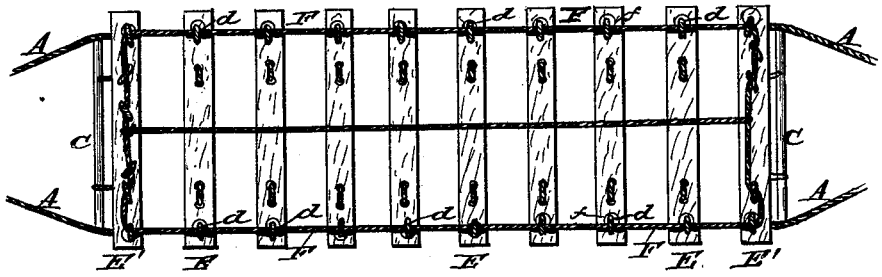


Fig. 5.

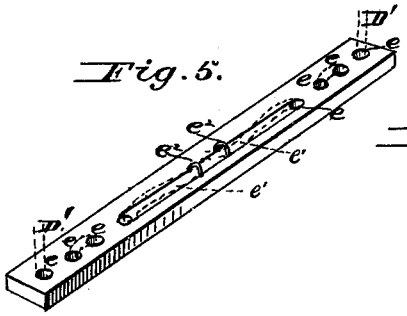


Fig. 6.

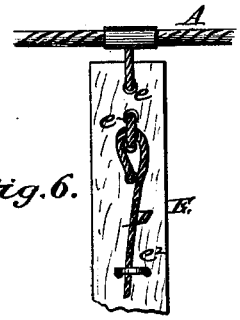


Fig. 7.

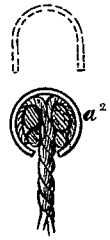


Fig. 8.

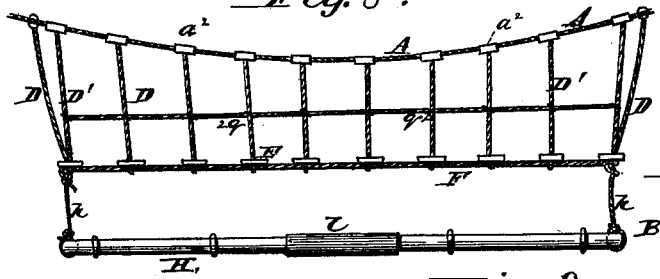
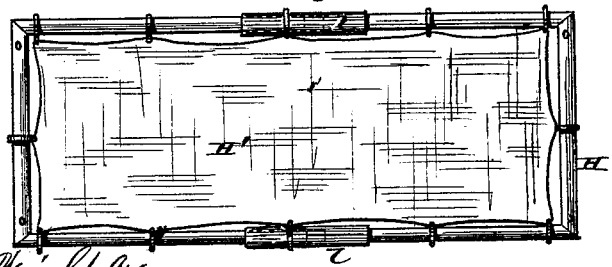


Fig. 9.



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James M. Wright Jr.

UNITED STATES PATENT OFFICE.

EDMUND F. HANKS, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN HAMMOCKS.

Specification forming part of Letters Patent No. **202,814**, dated April 23, 1878; application filed January 4, 1878.

To all whom it may concern:

Be it known that I, EDMUND F. HANKS, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Suspension-Beds, of which the following is a specification:

The object of this invention is to furnish an improved hammock or suspension-bed having a level adjustable bottom which will not tip when the occupant rolls to one side, and which has a longitudinal as well as lateral swing, and which, further, combines the qualities of compact construction, lightness, and strength.

The elevation of the head and feet, the depression of the middle of the body, and the liability to upset has made the ordinary sailor's hammock so very objectionable that it is seldom used elsewhere than on shipboard, although a light suspension-bed capable of being compactly stowed away has long been desirable on land as well as at sea.

In the endeavor to supply the demand for such an article my invention had its origin; and, as now perfected, it consists, first, in a suspension-bed slat having a series of holes near each end and an intermediate groove in its top, in combination with two depending cords, bent through said holes and their free ends lying within said groove, whereby the slat is rendered easily adjustable, as hereinafter more fully described; second, in a cord-clutch, having transverse holes through it near each end, and a longitudinal socket in one end, intersecting one of said transverse holes; third, it also consists in an improved means of retaining suspension-bed slats a proper distance apart, and a novel mode of securing the slat-cords to the main suspension-cords.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a plan view. Fig. 3 is an end view. Fig. 3ª is a perspective view of a cord-clutch. Fig. 4 is a bottom view. Fig. 5 is a perspective view of one of the cross-slats. Fig. 6 shows a modified fastening of the pendent cords to the cross-slats. Fig. 7 is an enlarged transverse section of the suspension-cord, showing the mode of attaching the depending cords. Fig. 8 is a view of the suspension-bed, having a supplementary bed-frame attached and suspended therefrom. Fig. 9 is a plan view of the supplementary bed-frame and its inclosed sheet.

The main supporting-cords A A are looped at their opposite ends to common rings *a*, the means of suspension of which may be ordinary hammock-hooks, but are, preferably, hooks firmly attached to metal plates, secured to the wall or other support by screws or bolts. These cords are provided with adjusting-clutches B, differing from the ordinary tent-rope clutch in having the cord inserted into an endwise socket, *b*, and its knot located within a transverse aperture, instead of simply having near each end a transverse hole, which necessitated the exposure of the knot.

By means of these clutches the cords A A are adjusted to an equal length, which gives an easy swing and the desired height from the floor or ground.

Rings or loops *v* embrace the loops of cord which are adjusted by the clutches, and when slipped up close to the clutches, as shown in Fig. 2, cause the clutch to make short bends in the cord which passes transversely through it, and thus hold said cord very tightly.

At suitable distances apart to give a proper length for a bed, cross-bars C C separate the cords A A, being firmly secured thereto, and having attached depending cords D D, at an equal distance from each other and the ends of the bars. From the supporting-cords A A, between the bars C, also depend cords D′ D′, at equal distances apart; and when all these depending cords are attached, in a manner hereinafter described, to the cross-slats E E, their lengths are so graduated with relation to the sag of cords A A as to support said cross-slats in a common horizontal plane, whereby is secured a level bottom for the bed. These cords are attached to the main cord by centrally separating the strands of the main suspension-cord, and passing the end of a depending cord through the split or opening, and then dividing the end of said depending cord, and folding the two halves down against the opposite sides of the suspension-cord, then placing upon the suspension-cord a split metal sleeve or clasp, a^2, which hugs said cord tightly against the portion of the depending cord which passes through it. The edges of the

clasp do not touch the depending cord, but are cut away, so as to avoid chafing said cords. Each of the intermediate cross-slats (designated by the letter E) has a longitudinal series of four holes, *e*, near each end, the inner holes of the two series being connected by a groove, e^1, in the top of the bar, and said groove is spanned by two staples, e^2 e^2. In attaching the pendent cords to the cross-slats, they are passed first downward through the outer holes and upward through the next; then again downward, and, finally, upward through the inner holes, and their ends extended along the grooves and under the staples, which confine the ends of the cords within said grooves.

By this mode of fastening, the cords are rendered easily adjustable or removable from the slats, when desired, so that a broken slat may be easily replaced, or the ends or center of the bed raised or lowered, when desired.

The end cross-bars E′ have similar series of holes and grooves, and have also four additional holes within the grooves, for the attachment of the end pendent cords D, the upper ends of which are provided with metal inclosing-tips passed, through holes in the separating cross-bars C, and have heads hammered upon them. The lower ends of these cords are passed downward through the outer holes in the grooves, upward through the inner holes, and turned through the loops of the other cords.

F designates a bottom or frame cord, which passes under the ends of the cross-bars E E, and through the outer loops *d*, formed in attaching the pendent cords, and also passes along under the end cross-bars and through the loops of the pendent cords, and has its ends tied or spliced together. This cord F is of such length as to hold all the cross-slats in the positions in which they would naturally hang if free; and to secure them from displacement, said cord has firmly attached thereto rings or eyelets *f*, which embrace the loops through which it passes near the ends of the bars.

Longitudinally across the bottoms of the slats, and attached to the end bars, may be run a cord, *q*, which is also attached to each of the slats, in order to assist in supporting said slats at equal distances apart and equalize the strain thereupon.

Between the bed and suspension cords also I may run intermediate side cords q^2 q^2, attached to the depending cords, for preventing said cords from separating to allow an infant to fall out of the bed.

From the description it will be seen that the horizontal dimensions of the bottom of the bed are the same as those of the space included between the supporting-cords and the separating cross-bars, and that, while the bed has a lateral swinging motion on the main cords, it will also, upon occasion, sway freely longitudinally; and, owing to each of its sides being independently supported, the bed will not upset should the occupant roll to one side, and for the same reason it will not be upset in gaining access thereto.

From the corners of the bed, and attached thereto in any convenient manner, depend cords *h*, which are fastened to the corners of an oblong frame, H, of about equal size with the bottom of the bed, and filled by a canvas sheet, H′, strongly laced to its side and end bars, thus forming a supplementary bed-support, which may be used by a mother or nurse desiring to be near an infant occupying the upper bed. The side bars of this frame are each composed of two equal parts, held together by sleeves or double sockets *l*, so that these bars may be separated; and when the supporting-cords are detached from their suspension-hooks, and the bed taken down for stowing away or transportation, the supplementary bed-bottom may be folded to inclose all the other parts, and thus make a compact, easily-handled package, comprising only the parts of the bed and its cords, and requiring no other inclosure.

In Fig. 6 I have shown a modified manner of attaching the pendent cords to the cross-slats, in which the cords, after being passed upward through the inner holes of the slats, are turned outward and under the loop on the top of the bar. This method may be preferred by some as being more secure; but I prefer the fastening shown in Fig. 2.

Besides the use of my invention on land, it can be very advantageously used on transports and emigrant-ships for soldiers or emigrants, saving the expense of building stationary berths; being more healthful, as they admit a free circulation of air; preventing seasickness, by always remaining on a level, whether the ship rolls or pitches, the flexible cords permitting a longitudinal motion, while the suspending-cords allow a lateral motion.

Its light construction, being composed of only a few sticks and cords, prevents its becoming dirty or filled with vermin, and would make it desirable in the navy; besides, it can be made as cheap, if not more cheaply, than the common sailor's hammock; it can be stored away as compactly; and, above all, it allows the men to rest comfortably. It is adapted to summer hotels, and all places where temporary beds are used, and have to be put up and taken down quickly and stored away compactly.

I also make a small size of the bed, which furnishes a safe and comfortable cradle for children, the high sides preventing them from falling out, and the separated suspending-cords preventing it from tipping or upsetting when they lean on one side.

It is especially adapted to parties traveling with children, its size admitting of its being packed in a small trunk, and wherever a pillow is to be had a bed is at hand.

In crowded summer hotels, and for poor people who live in crowded tenements, it can be swung over and across the foot of the bed, the

ends being high enough to walk under, and the mother can take the baby out, put it in, or swing the cradle without leaving the bed.

It can be swung on piazzas or under trees, with a cushion in the bottom, as a lounging-place for adults and a swing for children.

The adjustable cords can be shortened to make it easy of access for adults, and lengthened to prevent children tumbling out, by loosening and drawing the pendent cords either way, as required.

For soldiers, hunting or fishing parties, where a mattress is not obtainable, the movable cross-pieces, all except the end ones, can be removed, the double canvas bottom, with the jointed horizontal bars, can be placed in position, and a swinging cot, clear of the damp ground, is ready for use. The canvas bottom may be double, and can be filled with leaves or straw, when obtainable, to form a mattress or bed, and can be used with either the cross-slats or the horizontal bars.

What I claim is—

1. The combination, with the top suspension-cords, of the pendent cords inserted between the strands, split, and bent around the sides thereof, and the metal clasps embracing the junction of said cords, substantially as described.

2. A slat for a suspension-bed, having a series of holes near each end and an intermediate groove in its top, in combination with two depending cords, bent through said holes, and having their free ends lying within said groove, substantially as set forth.

3. The cord-clutch, having transverse holes through it near each end, and a longitudinal socket in one end, intersecting one of said transverse holes, substantially as described.

4. The combination of the bottom cords F, having attached rings *f*, cross-slats E, and depending cords D′, attached to said cross-slats, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

EDMUND F. HANKS.

Witnesses:

WILLIAM P. WOOD,

JOS. R. VAN SYCKLE.