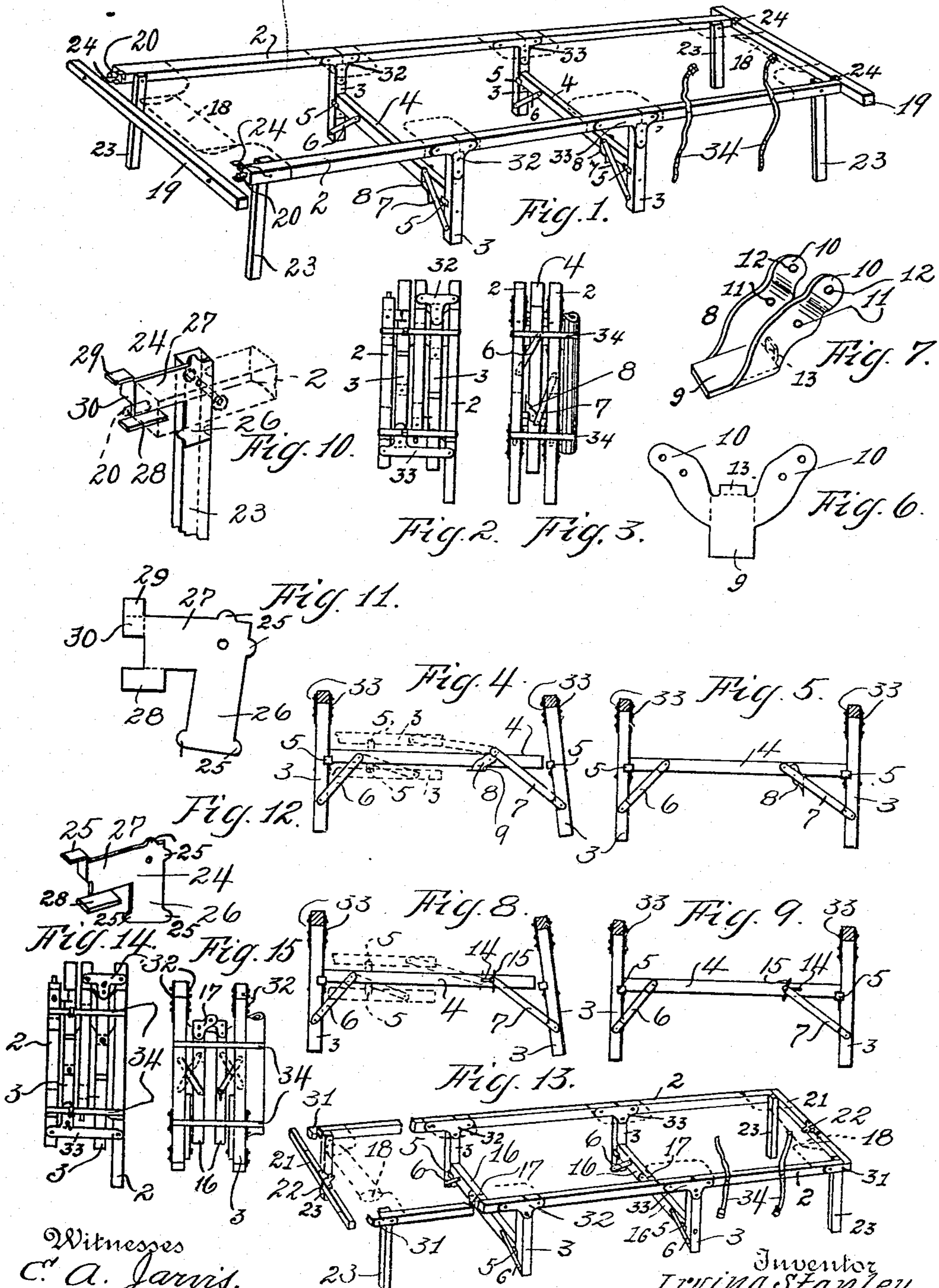


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I. STANLEY.
FOLDING FURNITURE.
APPLICATION FILED AUG. 28, 1903.



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FOLDING FURNITURE.

No. 835,374.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, IRVING STANLEY, of the borough of Manhattan, city and State of New York, have invented a certain new and useful Improvement in Folding Furniture, of which the following is a specification.

The present invention relates particularly to articles of folding furniture in whose construction there is embodied a frame having connected thereto a pair of members joined by a cross-brace, the organization being such that said members may in folding be brought close together in line with each other and with the cross-brace without disconnecting or separating the parts from each other. Such an organization is suited for the construction of a folding cot, and the present invention is herein disclosed in such an article, it being among the objects of the present improvements to facilitate the operation of putting up and taking down and folding and to provide a construction enabling the article to be folded up in as small a compass as may be.

In the drawings accompanying the present specification there is illustrated a folding cot embodying my present improvements.

In the drawings, Figure 1 is a perspective view of such cot, one of the end bars being indicated out of its assembled position and the canvas top or cover being in outline. Figs. 2 and 3 are two views of the cot fully folded. Fig. 4 is a cross-section of the cot representing a pair of upright legs, one on each side of the cot, connected by a cross-brace and showing means for throwing out the lower end or foot of one of the legs, as in folding up the cot, and, conversely, for drawing it in, as in putting up the cot in condition for use. Fig. 5 is a view similar to Fig. 4, showing the parts of the latter figure set up. Fig. 6 is a view, on an enlarged scale, of a blank which may be used in making the pivoted brace-end carrier indicated in Figs. 4 and 5. Fig. 7 is a detail of such carrier. Figs. 8 and 9 are similar to Figs. 4 and 5, respectively, but show somewhat different means for throwing out and drawing in the leg and for fastening the same in its drawn-in position. Fig. 10 is an enlarged perspective detail of the bent bracket-forming plate designed for attachment to each end leg and the strengthening of the joint at that point. Fig. 11 is a view of a

blank which may be used for the manufacture of such strengthening-bracket. Fig. 12 is a detail perspective of the latter. Figs. 13, 14, and 15 are views similar to Figs. 1, 2, and 3, respectively, but illustrate a cot each of whose intermediate pairs of legs are connected by a hinged cross-bar.

Similar characters of reference designate corresponding parts in all figures.

This present cot construction embodies longitudinal side bars of the desired length, constituting a frame and between which is stretched the canvas. These bars or rails (designated in Figs. 1 and 13 by 2 2) are in the present instance each divided into three sections or parts jointed together to fold upon each other in a manner that will presently appear, while the canvas top is preferably somewhat cut away at each joint as well as at the end corners; (see the dotted outline in said figures,) so that the canvas will not interfere with the folding.

Disposed beneath each joint, with the abutting ends of the contiguous sections resting thereon, is an upright leg member 3, each such member being connected by a cross-brace with the corresponding member under the opposite joint of the other longitudinal bar, as will be evident from Figs. 1 and 13. There is therefore in the present cot two sets of intermediate supports for the longitudinal bars, each set comprising a pair of legs connected by a cross-bar.

It being premised that in the operation of folding these longitudinal bars are brought up close together in line with each other without in any way disconnecting or separating any of the parts of either of said supporting sets, means will now be described whereby this may be effected.

In the construction disclosed in Fig. 1 particularly the cross-bar 4 of each supporting set is a rigid one-piece bar, abutting at opposite ends against the legs of the set and prevented from dropping downward by stops 5 5 on the legs.

Adjacent to the ends of each cross bar or brace 4 are diagonal braces 6 7, each such brace being pivoted to the cross-bar and extending diagonally downward, where it is pivoted to the leg. When the cot is put up ready for use, these diagonal braces act by

pulling and holding inward the lower ends of the legs to tightly stretch the canvas and hold the parts firmly and rigidly together. There may, of course, be a pair of the diagonal braces 6 7 on each side of each set of legs and connecting cross-bar. The points of pivotal connection of the diagonal braces and their relative lengths are such that in folding the legs comprised in each pair may be swung down upon opposite sides of the connected cross-bar. (See the dotted position in Figs. 4 and 8.) To enable this to be readily effected, it is desirable to provide some means for relieving the tension on the canvas preparatory to the folding operation.

In the construction illustrated in Figs. 1 to 7, inclusive, the upper end of the diagonal brace 7 is pivoted to a carrier 8, which in turn is pivoted on the cross-bar 4. This carrier may be made of sheet metal and has a finger-piece 9 and laterally-extending ears 10 10, between which the cross-bar is located, and which are provided with perforations 11 for pivotal attachment to the cross-bar and perforations 12 for pivotal attachment to the diagonal brace. When the finger-piece of this carrier is pulled toward the left from the position indicated in Fig. 5 to the position indicated in Fig. 4, the connected brace is pushed outward and the lower end of the leg moved in a like manner to thereby relieve the strain on the canvas. In the construction illustrated one diagonal brace is somewhat longer than the other, and, assuming the tension to be relieved by the swinging of the carrier of each supporting set, as described, the legs, cross-bar, and diagonal braces of the supporting set can then be readily moved, so that the legs occupy the position indicated in Fig. 4—that is, with the longitudinal bars in line and close together. Conversely, assuming the relatively movable leg of a supporting set to be in the position indicated in Fig. 4, the carrier may then be swung to its opposite position, drawing the lower end of the leg inward and tightly stretching the canvas by operating about the end of the cross-bar as a fulcrum until the line of longitudinal strain on the diagonal brace, which passes through the pivot-axis, at the carrier end of the brace, comes into line with and preferably passes beyond the pivotal axis about which the carrier swings. In this position the parts are firmly held by a stop 13 on the carrier, which comes in contact with the under side of the cross-bar 4.

Instead of rendering the end of at least one of the diagonal braces adjustable in and out in the manner described the construction indicated in Figs. 8 and 9 may be adopted, in which the brace 7 may be adjustably secured in a slot 14 of the cross-bar, as by a thumb-screw 15 or equivalent device.

It has already been stated that in folding each supporting set the upper ends of the legs are caused to approach and such ends

brought in line with each other, the legs still remaining side by side. Such a result may be accomplished with a jointed cross-bar instead of the rigid one-piece bar thus far described.

A cot construction having a jointed cross-bar is illustrated in Figs. 13, 14, and 15, in which each supporting set is substantially the same, as already described, except that the cross-bar 16 thereof is provided intermediate its ends with a knuckle-joint 17, permitting the parts of the bar to be folded down on each other. The supporting set is provided, as before, with diagonal braces 6 6, which braces are, however, in the figures referred to shown of equal length. Obviously either of the constructions described for shifting the upper end of one of the diagonal braces may be adopted. In folding, the canvas having first been loosened and the cross-bar pulled out somewhat from the other leg to clear the top 5 thereon, the ends of the cross-bar are then swung downward and the legs moved parallelly together until they approach as near as possible.

The present cot is one provided at each end with a removable end bar passing through loops 18 18 at the ends of the canvas and holding the canvas stretched lengthwise. In Fig. 1 each end bar 19 is a single one-piece bar, which fits over dowel-pins 20, projecting from the ends of the longitudinal or side bars 2 2, while in Fig. 13 each end bar 21 has a knuckle-joint 22 between its ends.

At each end of the side bars 2 2 is a leg 23, which in the particular construction illustrated is pivoted to the side bar on the inside thereof, so that it may be swung upward on the inside of the bar in line therewith. Preferably some means will be employed for holding each leg 23 firmly in position and as rigid as possible against stresses tending to force it from its proper upright position. The particular means indicated in Figs. 1, 10, 11, and 12 for such purpose comprises a bent-up plate or bracket 24, rigidly secured to the outer face of each leg and in such position as to intervene between the leg and the inner face of the longitudinal bar to which the leg is pivoted. This plate may be provided with projections 25, adapted to be bent over the edges of the leg, and ordinarily may be made in somewhat an L shape, one arm 26 running down the leg while the other arm 27 extends toward the adjacent end of the longitudinal bar which lies along the face thereof. Adjacent to its end portion this horizontal arm of the plate has a lateral outwardly-extending flange 28, which is located under the end portion of the longitudinal bar and projects beyond the extreme end thereof, as indicated in Fig. 10. The attempt to swing the lower end of the leg outward will be resisted by the pressure of the flange against the longitudinal bar, while the leg is free to be swung inward

in line with the latter bar. The end bar when in position serves to lock the leg from this inward-swinging movement by means of an overhanging keeper 29 of the arm 27 of the plate adapted to extend over upon the top of the positioned end bar, this keeper, together with the lateral inwardly-extending flange 30, from which it projects, and the said flange 28 operating to resist the action of deforming stresses tending to alter the proper relative position of the end bar.

In Fig. 13 metallic sockets 31 are secured to the ends of the longitudinal bars for the reception of the end bar extremities, and the end legs impinging against the end bars are prevented from moving outward.

The manner in which the folding of the cot is completed now remains to be described. Assuming the end bars to have been removed and the end legs to have been swung upward and inward, as aforesaid, the canvas is slackened in the manner already described. The manner in which the two longitudinal or side bars are then caused to approach each other and ultimately lie side by side will be understood from the explanation already given. The canvas should then lie over on one side. Each leg 3 of one of the said supporting sets, the set at the left in Figs. 1 and 13, has rigidly secured to it a hinge-forming plate member 32, (there may be one on each side of the leg,) to which the end section of the longitudinal bar on that side is pivoted, as well as the intermediate section. When straightened out, the contiguous ends of the said sections may rest on the upper end of the leg and the pivotal axes of the sections are substantially equidistant from the leg. The two end sections with their swung-in end legs may thus be swung down close against the legs of the folded supporting set, and the intermediate sections may be brought into a similar relation on the other side of the latter legs. Referring to the other of said supporting sets, each leg 3 thereof is provided with a relatively rigid hinge-forming plate member 33, (there may be, as before, one such member on each side of each leg,) to which on one side of the leg the other end section of the longitudinal bar on that side is pivoted, while on the other side of the leg the remaining end of the intermediate section is pivoted. It will be noticed that the distance of the latter pivot from the leg of the set is somewhat greater than the distance of the pivot of the connected end section, although, preferably, the length of the sections between the two pivots is sufficient to enable the sections of the bar to rest upon the leg.

The relative distances mentioned in the last paragraph are adequate to enable the end sections last mentioned to be brought around toward the folded end sections until the parts take the position indicated in Figs.

2 and 14, and Figs. 3 and 15, when they may be bound together by straps 34.

Having thus described my invention, I claim—

1. An article of folding furniture having in combination, oppositely-disposed frame parts, means connecting the same one with the other, a pair of members connected to and extending from the frame parts, a cross-brace at the ends of which said members are located and which members are adapted to be positioned transversely to said cross-brace and to extend when so positioned on both sides thereof, and means extending between one of said members and the cross-brace for turning the said member about the cross-brace as a fulcrum while the member is in its said transverse position and for then holding the member.

2. An article of folding furniture having in combination, oppositely-disposed frame parts, means connecting the same one with the other, a pair of members connected to and extending from the frame parts, a cross-brace at the ends of which said members are located and which members are adapted to be positioned transversely to said cross-brace and to extend when so positioned on both sides thereof, diagonal braces extending from the cross-brace to the members, and means at the end of a diagonal brace for turning through the instrumentality of the latter one of said members about the cross-brace as a fulcrum and there holding it.

3. An article of folding furniture having in combination with a frame, a pair of members connected thereto, a cross-brace at the ends of which said members are located, means comprising links connecting said cross-brace with the pair of said members for permitting the said members to be folded down on opposite sides of said cross-brace with their corresponding ends in line, and means for turning through the instrumentality of one of said links, one of said members about the cross-brace as a fulcrum and there holding it.

4. In a folding cot, the combination of a pair of longitudinal bars, a fabric connecting the same, a pair of legs connected thereto, a cross-brace at the ends of which said legs are located, means comprising links connecting said cross-brace with the pair of legs for permitting the latter to be folded down on opposite sides of the cross-brace with their corresponding ends in line, and means for turning through the instrumentality of one of said links one of the legs about the cross-brace as a fulcrum to thereby place and hold said fabric under tension.

5. An article of folding furniture having, in combination with a frame, a pair of members connected thereto, a cross-brace at the ends of which said members are located, diagonal braces extending from the cross-

brace to the legs, and a carrier for adjusting the end of one of said diagonal braces in and out, and a stop for holding the carrier in the drawn-in position of the brace.

6. An article of folding furniture having, in combination with a frame, a pair of legs connected thereto, a cross-brace at the ends of which said members are located, diagonal braces extending from the cross-brace to the legs, a carrier pivotally mounted on the cross-brace and to which the end of one of said diagonal braces is pivoted and adapted to swing the line of effort of the diagonal brace across the pivotal axis of the brace, and a stop for said carrier.

7. A supporting set for an article of folding furniture, the same comprising in combination, a pair of legs, stops on the legs, a horizontal cross-brace adapted to engage with the stops, diagonal links extending from each end portion of the cross-brace to the leg thereat, and a power-applying device for turning by means of one of said diagonal braces the connected leg about the cross-brace as a fulcrum.

8. In a folding cot, the combination of a pair of jointed side bars forming end and intermediate sections, a fabric connecting said bars, a plurality of supporting sets, each set comprising a pair of legs, a horizontal cross-brace, and diagonal braces, and means for turning a leg in each set about the corresponding cross-brace as a fulcrum to thereby place said fabric under tension, said jointed side bars being pivotally connected with said supporting sets and foldable one pair of end sections between the other pair and the pair of intermediate sections.

9. In a cot, a pair of jointed side bars, a connecting fabric, and a supporting set under each pair of opposite joints of the side bars, each such supporting set comprising a pair of legs, a cross-brace and diagonal links, said sets being foldable with the cross-braces in line with the legs, combined with means for using the legs as levers to place the fabric under tension, legs pivoted to the side bars at their ends, a socket-forming plate rigidly secured to each such end leg, and removable end bars adapted to engage with said sockets when the end legs are in their supporting position.

10. An article of folding furniture having in combination with a frame, a pair of members jointed thereto, a cross-brace at the ends of which said members are located, and a link connection between each of said members and the adjacent end portion of the cross-brace, one such connection comprising a longer link than the other whereby the members can be folded down on opposite sides of the cross-brace with their corresponding ends in line.

11. An article of folding furniture having in combination with a frame, a pair of mem-

bers jointed thereto, a cross-brace at the ends of which said members are located, stops on the said members against which the cross-brace is adapted to bear, and a link connection between each of said members and the adjacent end portion of the cross-brace, one such connection comprising a longer link than the other whereby the members can be folded down on opposite sides of the cross-brace with their corresponding ends in line.

12. An article of folding furniture having, in combination, a pair of uprights, a plate-hinge pivoted to each upright, a pair of frame members also pivoted to each hinge, a cross-brace, stops on the uprights against which the cross-brace is adapted to bear, and a link connection between each upright and the adjacent end portion of the cross-brace, one such connection comprising a longer link than the other whereby the uprights can be folded down on opposite sides of the cross-brace with their corresponding ends in line.

13. The combination with the frame members of an article of furniture, of a detachable end member, and laterally-extending projections disposed at the sides of the frame members and forming sockets whose walls constitute stop-faces operating to prevent relative movement of the frame and the end member and to thereby strengthen the structure.

14. The combination with the opposite frame members of an article of furniture, of a pair of end uprights, a detachable end member, and a plate-hinge connecting each upright with its corresponding frame member, said plate-hinges having laterally-extending projections forming sockets whose walls constitute stop-faces operating to prevent relative movement of the frame and end members and to thereby strengthen the structure.

15. The combination with the opposite frame members of an article of furniture, of a pair of end uprights upon which the frame members rest, a detachable end member and a plate-hinge connecting each upright with its corresponding frame member, said plate-hinges being notched to form a bottom and side wall for the detachable member and having horizontal and vertical projections extending laterally from the plate-hinges and forming elongated sockets for the reception of the detachable member.

16. In a folding cot, the combination of a pair of side frames each comprising three jointed sections, end legs upon which the side frames rest, plate-hinges connecting each leg to its corresponding frame-section and having laterally-extending projections constituting elongated sockets, detachable end members adapted to fit in said sockets, intermediate pairs of legs connected to the frame at the joints between the sections, plate-hinges pivotally connecting at least one pair of intermediate legs to the frame members, and

cross-braces each having a link connection with a pair of intermediate legs.

17. An article of folding furniture having, in combination with a frame, a pair of members jointed thereto, a cross-brace at the ends of which said members are located and which is separate from and independent of said pair of members, and means connecting said cross-brace with the pair of said members for permitting the said members to be folded down on said cross-brace with their corresponding ends in line.

18. An article of folding furniture having in combination with a frame, a pair of members connected thereto, a cross-brace at the ends of which said members are located and which is separate from and independent of said pair of members, and means comprising links connecting said cross-brace with the pair of said members for permitting the said members to be folded down on opposite sides of said cross-brace with their corresponding ends at substantially the same distance from the adjacent end of the cross-brace.

19. A folding cot having, in combination, longitudinal frame-bars, a flexible cover secured to frame-bars, a pair of legs one leg under each frame-bar, a horizontal cross-brace at the ends of which the legs of said pair of legs are located, stops on said legs with which the cross-brace engages, and means comprising links connecting said cross-brace with the pair of said legs for permitting the said legs to be folded down on said cross-brace with their corresponding ends at substantially the same distance from the adjacent end of the cross-brace.

20. A folding cot having, in combination, two longitudinal frame-bars each comprising parts jointed together, a flexible cover secured to said frame-bars, sets of legs comprising pairs under the corresponding joints between the parts of the two frame-bars, horizontal cross-braces at the ends of which the legs of the respective pairs thereof are located, stops on said legs with which the cross-braces engage, and means comprising links connecting said cross-braces with the legs at their ends for permitting the legs to be folded down on their connected cross-braces with the corre-

sponding ends of the legs at substantially the same distance from the adjacent end of the cross-brace.

21. A folding cot having, in combination, two longitudinal frame-bars each comprising parts jointed together, a flexible cover secured to said frame-bars, sets of legs comprising pairs under the corresponding joints between the parts of the two frame-bars, horizontal cross-braces at the ends of which the legs of the respective pairs thereof are located, stops on said legs with which the cross-braces engage, means comprising links connecting said cross-braces with the legs at their ends for permitting the legs to be folded down on their connected cross-braces with the corresponding ends of the legs in line, pivoted end legs, removable end bars, and means for locking the pivoted end legs in their supporting position upon the insertion of the end bars.

22. A folding cot having, in combination, longitudinal frame-bars each comprising parts jointed together, a flexible cover secured to said frame-bars, pairs of legs under the corresponding joints of the two frame-bars, horizontal cross-braces one for each pair of legs and at the ends of which the legs of the pair are located, stops on the legs with which the respective cross-braces engage, means connecting said cross-braces with the respective legs for permitting the latter to be folded down on the cross-braces with their corresponding ends in line, end legs, hinges to which said end legs are connected and by which the latter are pivotally connected with the frame-bars, pins projecting from said frame-bars, and removable end bars adapted to engage with said pins, said hinges having projecting portions adapted to fit over and under the corresponding end bars and form sockets therefor and lock the extended end legs in position.

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

IRVING STANLEY.

Witnesses:

PIERSON L. WELLS,
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