June 21, 1938. D. ROSENBAUM 2,121,100

CONVERTIBLE COT AND DUPLEX CHAIR

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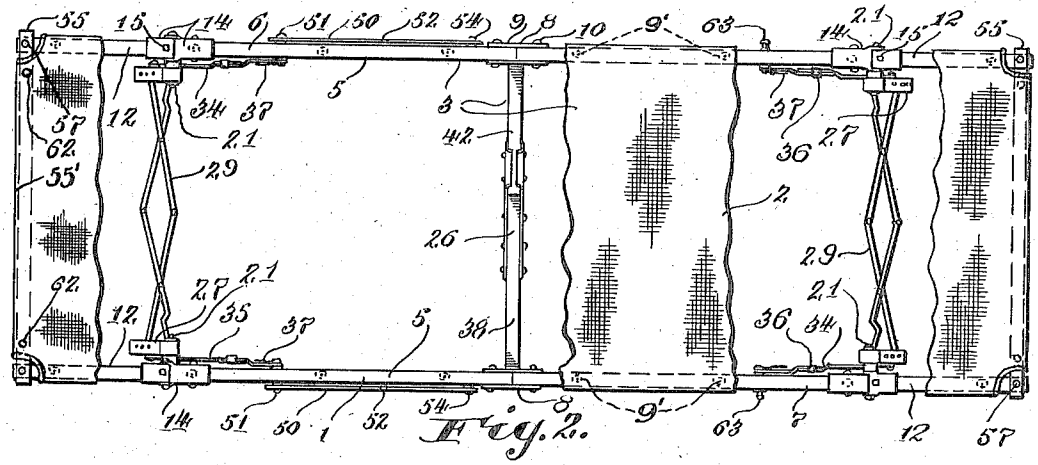


Fig. 2.

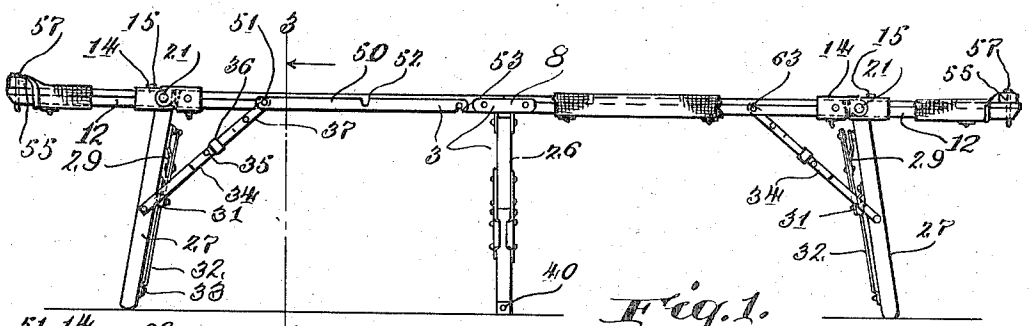


Fig. 1.

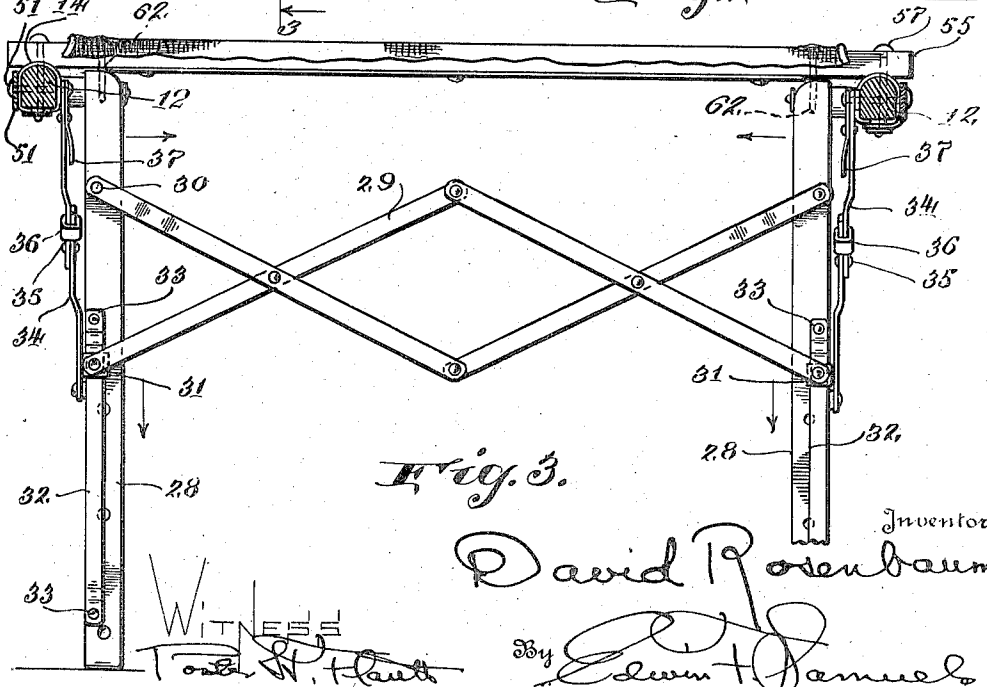


Fig. 3.

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Fig. 8.

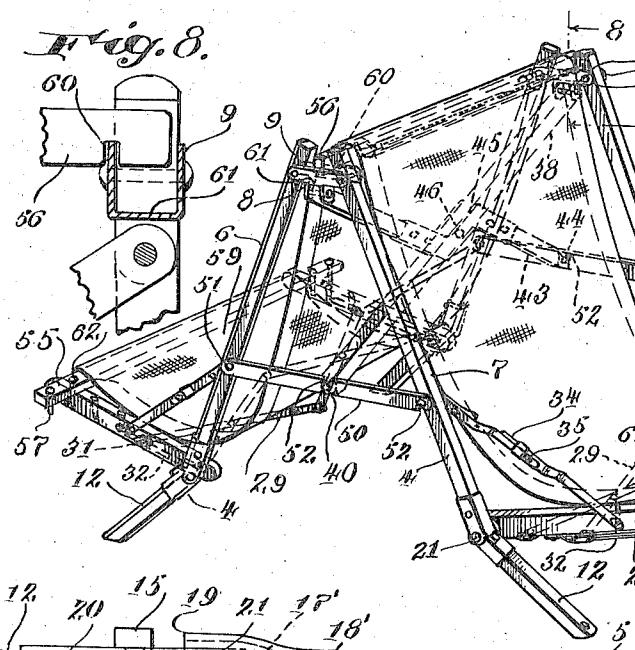


Fig. 5.

Fig. 9.

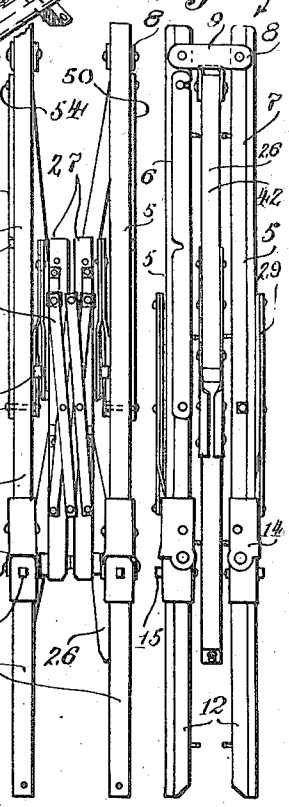


Fig. 7.

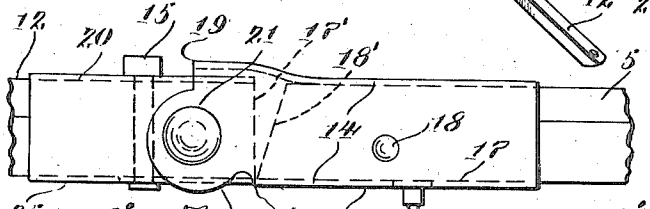
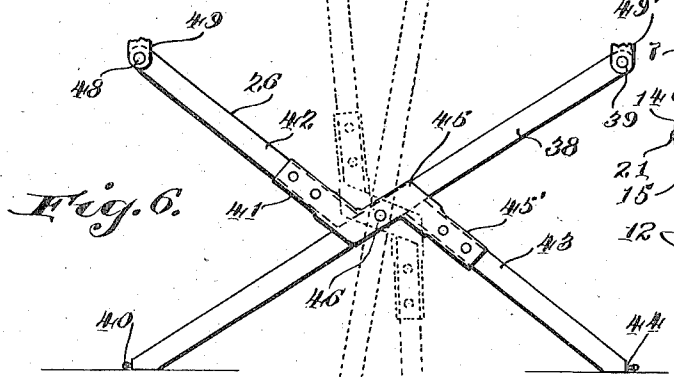


Fig. 4.

Fig. 6.



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CONVERTIBLE COT AND DUPLEX CHAIR

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Application August 15, 1936, Serial No. 96,161

3 Claims. (Cl. 155—45)

The invention relates to a cot in the form in which it has been developed of the type known as an army cot though the characteristics of an army cot are not essential to the invention in its broader scope more fully defined. The invention relates to a cot which is foldable into a small package for carrying, which package is reduced in dimensions almost to the exact volume of frame members and cover, the cot being also adapted not only for folding but by quick change of arrangement to serve as a chair and in the preferred form to serve as a duplex chair, the change from the arrangement in which the construction of the invention is adapted for use as a cot to the arrangement for which it is adapted for use as a chair or a duplex chair being instantaneously accomplished without tools and without extra parts, all the elements of the structure which are utilized in serving one function being utilized and equally essential in serving the other function.

In the accompanying drawings, I have illustrated a convertible cot and duplex chair embodying the features of the invention in the preferred form, the construction being capable of considerable variation without departure from the underlying principles of the invention, the description of the details of the preferred form being supplied in order that the manner of constructing and applying the invention in this form may be fully understood. In the drawings:

Figure 1 is a side elevation of the construction of the invention arranged for use as a cot.

Figure 2 is a top plan view of the same, the covering which is shown in the form of a textile fabric being broken away in order to completely disclose the frame to which the invention particularly relates.

Figure 3 is a section on the line 3—3 in Fig. 1, looking in the direction of the arrows.

Figure 4 is an elevation showing the convertible cot folded.

Figure 5 is a perspective view of the construction of the invention arranged in the form of a duplex chair.

Figure 6 is an elevation of the center leg assembly showing in full lines this leg assembly in the operative position which it occupies, both when the construction is arranged as a cot and when it is arranged as a chair, though in the latter position, the legs do not rest on the floor or ground but are otherwise supported above the base of support on which the structure is standing, the center leg assembly also being shown in dotted lines in a partially folded position to illustrate the manner of collapsing them.

Figure 7 is a detail view in side elevation of the connection between the side frame members and the end supports.

Figure 8 is a section on the line 8—8 in Figure 5 looking in the direction of the arrows.

Figure 9 is an elevation of the convertible cot likewise folded and looking at the same in a direction at right angles to Figure 4.

Referring to the drawings by numerals each of which is used to indicate the same or similar parts in the different figures, the construction shown comprises a jointed frame 1 and a flexible cover 2 which is shown as of textile fabric. This construction is capable of arrangement to serve the functions of the cot 3 or chair, preferably a duplex chair indicated by reference character 4.

More specifically described, the jointed frame 1 comprises side frame members 5, each of which is formed in two pieces indicated by reference characters 6 and 7 and hereinafter referred to as side frame sections. These are hingedly connected at the center at 8 by means of plates 9 shown as located on each side of the frame members and secured by pivot pins or rivets 10 extending through the frame members. These pins or rivets are spaced apart for a purpose later to be described. The construction also includes end support side frame members 12, positioned at each end of the frame, each of which is in alignment with the corresponding side frame members 5 when the article is used as a cot. These members 12 are also utilized as legs to serve as the legs of the chair which will be more fully explained and are connected thereto by means of hinges 14 which are provided with any suitable stop or positioning means 15 which stop the hinges and prevent the side frame members from turning upwardly from the cot position or forwardly or rearwardly from the chair position beyond the angle at which they are shown in Fig. 5. The hinges 14 are shown in detail in Figure 7. The side frame members 5 are encased at their ends in a U shaped casing 16 which is flanged at the bottom at 17 to secure the ends of the side frame members 5 which are preferably of wood and are pinned transversely at 18. The ends of the support side frame members 12 at 17' cooperate with the ends 18' of the side frame members 5 to form a stop in addition to the stopping function of the heads of the bolts 15 which contact the end edges 19 of the hinge casing 16. The hinged ends of the members 12 are also enclosed in metal casings 20 which are

of inverted U-shaped cross section and flanged as to their bottom longitudinal edges at 25. Casings 20 are secured by the pins or bolts 15 parallel to the legs of the U. Casings 20 are also pivotally connected to the casings 16 by transverse horizontal hinge pins 21 which extend through the ears 22 on the casing 14 and through the casing 20 which is spanned by the ears 22. These hinges permit the support side frame members 12 to swing forwardly or upwardly to the chair leg position which they occupy in Fig. 5 and stop them in this position and also permit them to swing into alignment with side frame members 5 and stop them in this position by contact of the edges of the members 14 and 20, particularly the bottom flanges 16 and 25, said contacting edges being indicated by reference character 24.

The cot is supported at its ends and at the center by center leg assembly 26 and end leg assemblies 27. The end legs, indicated individually by reference character 28, of each pair of end legs, are connected by pantograph constructions 29, best illustrated in Figure 3. These pantographs 29 are pivotally connected to the legs at 30 and slidably connected to slide in the direction of the length of the legs by followers 31 on the pantographs, sliding along guides 32 substantially parallel to the legs and secured at their top and bottom ends to the legs at 33. The end legs 28 are each pivotally connected to the side frames 5 and to the end support frames 12 at the upper ends of the legs by the hinge pins 21 and they are held in the cot position by pivoted and jointed braces 34 which are pivotally connected at each end to the side frames 5 and the legs 28 respectively, which are overlapped and pivotally connected at the centers 35, the motion of the sections about said pivots being restrained at the will of the operator by sliding locking sleeves 36 which are locked out of engagement when desired by means of spring plates 37 at the upper ends of said braces, see particularly Fig. 3. To support the sleeves 36 out of engagement while changing the arrangement of the cot, they are moved upwardly over the ends of the spring plates 37. The center leg assembly 26 consists, in the form shown, of a rigid leg 38 hingedly connected at its upper end to the bottom of both hinge plates 9 on one side at 39 and having at its lower end a laterally disposed supporting member shown in the form of a pin 40. The other leg 41 which is formed in two sections 42 and 43 is provided at its lower end with a corresponding pin or support 44. The sections 42 and 43 are carried in rigid offset bracket 45 pivotally mounted at 46, said pivot connecting the approximate center of said bracket to the approximate center of said leg 38. This bracket 45 as shown is formed of two plates which are shown as duplicates, one secured at each side to the leg sections 42—43 which are held thereby in offset relation in the same transverse plane of the cot and parallel to each other by said bracket, the plates 45′ composing said bracket being flat at the center and lying on each side of the rigid continuous leg 38 which they therefore enclose, holding the leg assembly at all times in one plane by permitting the leg 41 to swing relative to the leg 38 or vice-versa, the approach of these legs to folded position being illustrated in dotted lines in Fig. 6. The upper leg member of the leg 41 is hingedly connected to the hinge plates 9 of one of the hinges 8 on the side opposite to the pivot 39 by a pivot pin 48 which engages ears 49 depending from said plates 9, the ears in connection with pivot 39 being indicated by reference character 49′.

The side frames 5, particularly the sections 6 thereof, are provided with hinged supporting bars 50 which are pivotally connected at one end to the side frame members by the pins 51 which also serve to connect the upper ends of the braces 34 to said side frame members. These plates are notched at their top edges at 52 to receive the pins or supports 40—44 and when the construction is in cot arrangement as shown in Figures 1 to 3, these supporting plates or bars are engaged by means of downwardly disposed hooks 53 formed in their ends to and with screws or pins seated in the side frames 5 for this purpose at 54. In the cot position of the construction shown in Fig. 1, the end supports are straight, the side frame sections 6 and 7 of the side frame members 5 are in alignment with each other and in alignment with the end support side frame members 12. The legs are held by the braces 34 inclined slightly outwardly toward the ends of the cot and downwardly. These legs are maintained in parallelism by pantograph members 29. The center leg assembly is arranged as in Fig. 6, the weight on the cot serving to spread the side frame members 5 and hold them in their outside position in which they and the legs 38 and 41 of the center leg assembly 26 are stopped by the rigid offset bracket 45; in this position the cover is supported by end bars 55, which extends through a tubular fold 55′ formed in each end of the cover 2, the sides of the cover being detachably secured along the entire length of the side frames by suitable clip fasteners as shown by the numeral 9′. The end bars are engaged with the outer ends of the end support side frame members 12 by pins 57, the bar 50 being hooked in inoperative position as shown in Figures 1 and 2.

To convert the cot to serve the duplex chair function, the locking sleeves 36 are slid upwardly along the braces 34 into engagement with the plates 37. The braces 34 are then folded about the pivot pins 35 and the end leg assemblies 27 are folded inwardly and upwardly and then downwardly to the chair seat supporting position in which they are shown in Fig. 5. At this time, the end support side frame members 12 are bent upwardly and forwardly to the chair supporting position in which they are shown in Fig. 5, in which they provide a forwardly arranged support for the chair seat 59 as indicated in Fig. 5. At this time, the side frames 5 are folded upwardly about the hinges 8, the ends of these side frame members 6 and 7 being spaced by the hinge action so that a center support 56 which is notched near its ends at 60 to engage the edges of one of the plates 9 which plates are at the center connected by a bottom web 61 giving them a U shaped cross section at the center can be placed between the ends of the sections or pieces 6 and 7 of side frame members 5, said center support extending from one side to the other of the chair at the top of the chair back. This center support 56 supports the cover 2 at the top, the cover being folded downwardly at the center over said support and secured at its ends to the forward ends of the legs 28 by means of the end frames, or cross bars 55 similar to that described to hold the ends of the cover of the cot. The end frames 55 are held in position by the pins 62 which engage holes in the ends of the legs provided for this purpose. In the duplex arrangement, the side braces 34 are again

straightened and locked by the return of the sleeve **36** to a position adjacent the pivot **35** in which it encloses the two adjacent overlying ends of the hinged brace **34**. The center leg assembly **26** is moved upwardly as the side frames are folded upwardly at the center in the manner described being supported at their bottom ends by means of pins or supports **40** which engage the center notches **52** in the bars **50** of which bars the hooks **53** are engaged with the pins **63** by which the hinged braces **34** carried by side frame section **7** are pivoted at their upper ends having reference to the cot position to the side frame sections **7**. The convertible cot construction is thus held in a duplex chair position in which it is rigidly secured with no additional members not essential to the cot function except the supporting plates or bars **50** and the center cover support **56**.

To adjust the depth of the seat and the angle of the back portion of the cot cover, the cross bars **55** are adjusted in the direction of the length of legs **28** which form side supports for the seats. For this purpose the legs **28** have a series of holes to receive pins **62** in various positions of adjustment.

The manner of folding the cot will be easily understood from the description and the illustration in Figures 4 and 9.

I have thus described specifically and in detail a convertible folding cot and duplex chair construction embodying the features of the invention in the preferred form, the description being specific and in detail in order that the manner of constructing, applying, operating, and using the invention may be fully understood, however, the specific terms herein are used descriptively rather than in a limiting sense, the scope of the invention being defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. A cot adapted to be transformed into a chair comprising a frame having a side frame member at each side in two pieces, hinged at the center, an end support side frame member at each end of each side frame member, hinged thereto to swing upwardly through a limited arc and provided with stops to limit said swing, a removable end frame connecting each end of the side frame, a removable cover removably secured to said frame, legs pivotally connected adjacent each hinge and supporting the side frame members at said respective hinges in the cot arrangement, the side frame members being adapted to be folded about the center hinges, raising the center hinges and the ends of the side frame members adjacent said hinges and the center legs, a removable support on each side for the lower ends of said center legs adapted to be connected to said side frame members at each side of the center hinges and to extend from one to the other well below said center when in chair arrangement, the end legs being adapted to swing upwardly to form seat frames and jointed braces connecting said end legs to said side frame members, the end frames having means whereby they are engaged with the outer ends of said legs to support the ends of a cot cover in the chair position, a center cross bar supported on the hinges at the center of the side frames to support the couch cover at the top of the chair back, the end support side frame members being deflected forwardly beneath the seats serving as legs to support the same.

2. A cot adapted to be transformed into a chair having side frame members hinged at the center and near the ends, providing a member at each side in four hinged sections, six legs connected in pairs and pivoted one leg adjacent each hinge, hinged jointed braces for each end leg and stops for each end hinge limiting its swing to a small arc which extends upwardly from cot position, the side frames being adapted to be folded upwardly at the center to form a chair, the center legs then being elevated with the center ends of the side frames, supporting bars for each side frame, each pivoted at one end to one of the respective side frame sections and having detachable connection at its other end with a section of a corresponding side frame member on the opposite side of its center hinge, means on the lower ends of said center legs for detachable connection respectively with said supporting bars, the end legs in the chair arrangement being moved upwardly to form seat frames and the end sections serving as legs to support the structure, and brace means adapted to support said end legs in raised seat forming position or to hold the end legs, when lowered, in cot-forming position.

3. An article of furniture adapted to be transformed from a cot into a chair comprising side frames and removable end frames, a cover removably secured to said side and end frames. supporting means for supporting said frames in a horizontal position, said side frames being formed in sections, a hinge centrally located of said frame and connecting a pair of central sections, end sections hinged to the outer ends of the central sections and adapted to swing through a limited arc, stop means to hold the said section in alignment with the central sections when moved in one direction and to limit said swing when moved in the opposite direction, said frame supporting means pivotally connected to the said frame adjacent the outer hinge members, whereby the said cot is adaptable to be arranged in a chair position, the side members are foldable about the central hinge to form an acute angle between the central side members, means for securing said frame in said position, means for positioning the frame supporting means on the opposite side of said frame to form a seat supporting means, means on the ends of said supporting members for receiving the removable end frames, means extending transversely of the frame adjacent the central hinge member for bracing the said frame when the frame members are in angular relationship to each other, said cover adapted to be supported adjacent its center by the said transversely extending means and at its ends by the removable end frames to provide a seat and back rest for said chair, said end sections adapted to be angularly disposed to the central sections for supporting said chair.

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