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P. M. SEYMOUR
FOLDING TABLE AND BENCH

2,642,925

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2 Sheets-Sheet 1

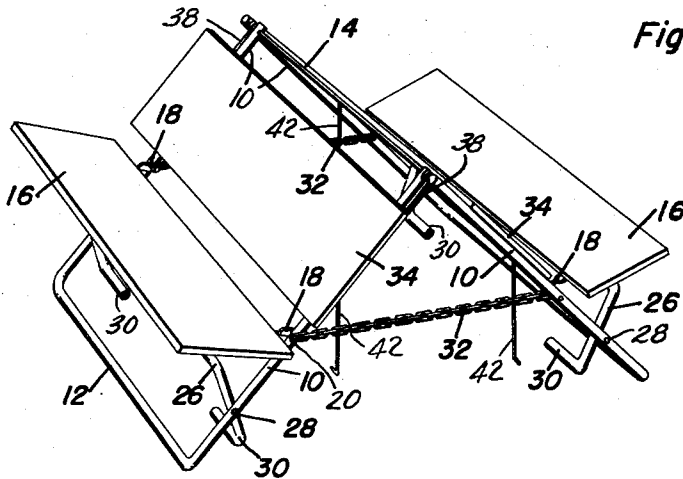


Fig. 1

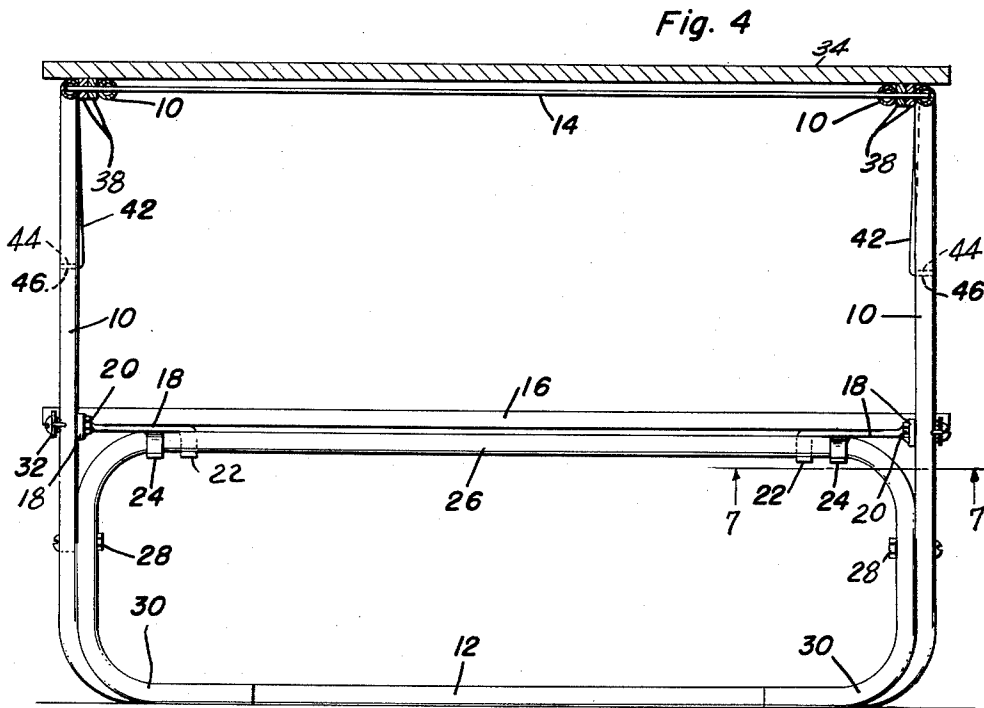


Fig. 4

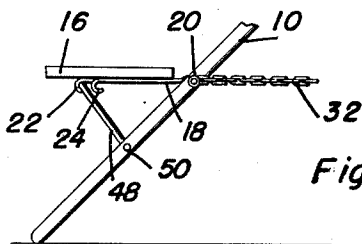


Fig. 6

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Fig. 2

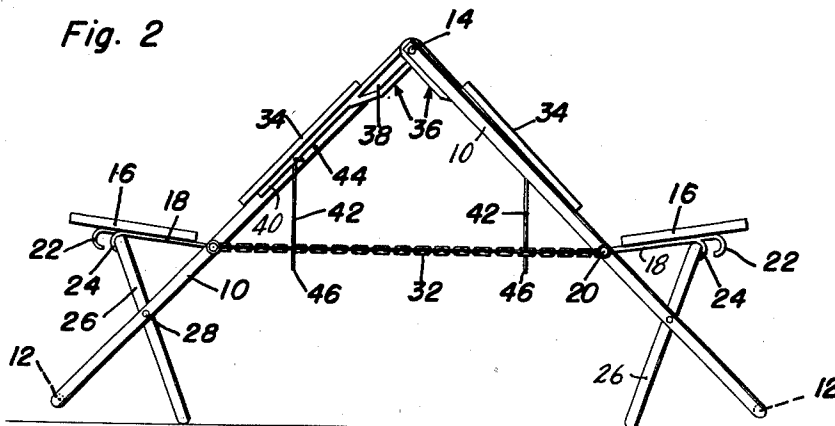


Fig. 3

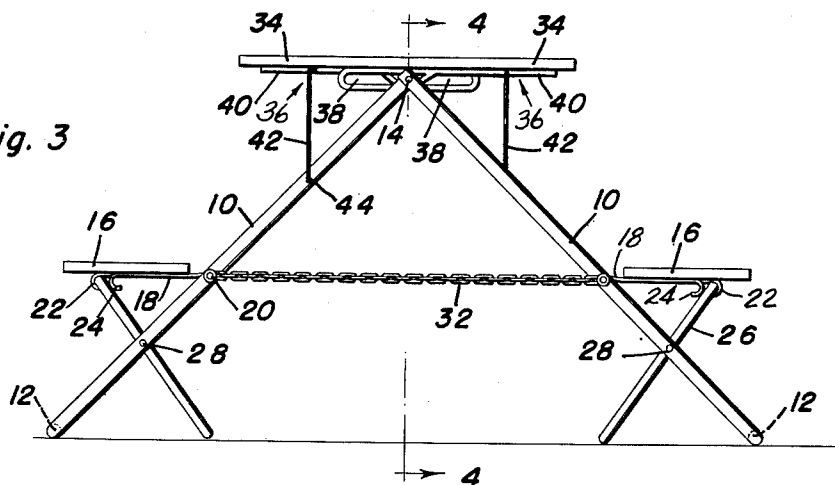


Fig. 5

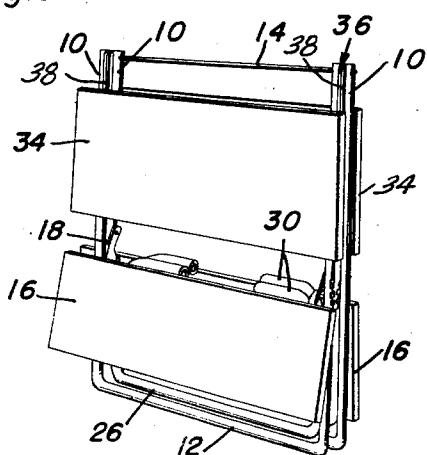
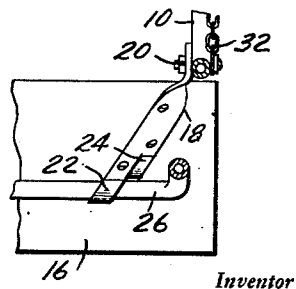


Fig. 7



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UNITED STATES PATENT OFFICE

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FOLDING TABLE AND BENCH

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5 Claims. (Cl. 155—43)

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This invention relates generally to furniture and more particularly to a folding table having seats or bench structure, the device being collapsible and the table top panels being disposable in inclined position, facilitating their use as backs for the bench structure.

A primary object of this invention is to provide an article of furniture, particularly adaptable for use outdoors and capable of being used as a table with seats attached or as a bench of dual or multipurpose character.

Another object of this invention is to provide a folding article of furniture of the character mentioned above, wherein the greatest dimension of the folded article is the length of a single leg member, the table top panels, seats, and braces folding into compact form and into parallel relationship, so that the folded article may conveniently be accommodated in motor cars and the like.

Another object of this invention is to provide a device of the character mentioned above which can be manufactured of relatively light-weight material without unduly sacrificing rigidity and stability of the article when placed in use.

Another object of the invention is to provide a device which may be used as a double bench and wherein foot rests are incorporated with the leg members, when the seats and leg members are relatively disposed in certain positions.

An important and specific object of this invention is to provide a folding convertible picnic table and bench construction wherein the benches per se or seats are selectively positionable in either fully horizontal or inclined planes so that the transverse axes of the seats are not horizontal, the inner edges of the seats being lower than the outer edges of the seats, thus making the benches more comfortable, since a person sitting thereon can lean backwardly on the seat backs without sliding from the seats, it being noted that when the seats are disposed so that the transverse and horizontal axes thereof are both horizontal, greater comfort will be provided to persons seated thereon when using the table top panels as such.

A last object to be mentioned specifically is to provide a device of the character mentioned above which is relatively inexpensive and practicable to manufacture, which is safe to use, easy to operate, and which will give generally efficient and durable service.

Briefly summarized, the essential characteristics of the over-all convertible table and dual bench construction is characterized by an elongated assembling and hinging rod which, when the table or bench is in use, assumes a generally horizontal position. This rod serves to accommodate a pair of substantially duplicate complementary rectangular panels, said panels being adapted to serve, when horizontal and coplanar, in the capacity of a table top. These same panels, when in downwardly and outwardly diverging relationship, serve as back rests for the dual bench construction. Arms are attached to the undersides of the panels at the respective transverse end portions, and the adjacent inner ends of the respective arms extend beyond the longitudinal edge portions of the panels and are formed with slotted portions defining elongated loops. The loops may be moved into horizontal positions at which time the respective pairs of loops overlap and underlie the alternate panels to assist in maintaining the latter in table-forming relationship. These loops are hingedly and slidably connected with the hinging rod. The rod also serves to accommodate a pair of substantially duplicate opposed U-shaped leg frames, each leg frame embodying limbs or limb portions whose free ends are hingedly connected to the respective end portions of the rod and whose bight portions are adapted to rest on the ground or other supporting surface, means being provided for retaining said panels in table-forming position and said means being characterized by stay members pivotally connected at predetermined ends to said panels and the stay members being releasably engageable with coacting portions of the corresponding limbs of the U-shaped leg frames. Seat members are provided and additional means are also provided and operatively connected with the seat members and with the intermediate portions of the limbs all in a manner to be hereinafter set forth.

With these objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of elements and portions as will be hereinafter described in detail in the specification, particularly pointed out in the appended claims, and illustrated in the accompanying drawings which form a material part of this application, and in which:

Figure 1 is a view, in perspective, of the assembled device set up for use as a back-to-back twin bench;

Figure 2 is an end elevational view of the same;

Figure 3 is a view similar to Figure 2 and showing the device converted and set up as a dual-seat table with seats on each side of said table;

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Figure 4 is a vertical sectional view taken substantially on the line 4—4 in Figure 3;

Figure 5 is a view, in perspective, of the device in completely folded or collapsed condition; and

Figure 6 is a fragmentary end elevational view showing a modified form of brace.

Figure 7 is a fragmentary horizontal section taken on the plane of the line 7—7 of Figure 4 looking in the direction of the arrows.

By way of introduction to the following detailed description, it is to be pointed out that the subject matter hereinafter covered is an improvement on Patent 2,558,465, granted to me on June 26, 1951.

Like characters of reference designate like elements and portions throughout the specification and throughout the different views of the drawings.

Referring now to the drawings in detail, this device includes a pair of opposing U-shaped leg frames 10—10, the bight portions 12 adaptably contacting the ground as indicated in Figure 3, or alternatively being jacked up and supported above the ground when the article is used (Figure 2) as a double bench at which time the bight portions then serve as foot rests. The corresponding free ends of the limbs of said U-shaped leg frames are connected together by an elongated assembling and hinging rod 14.

A pair of elongated seats 16 of rectangular form are connected by hinging leaves 18 and hinge pins 20, with the limbs of the leg frames 10 at intermediate points of said limbs. It is desired that the seats 16 be selectively disposable in the positions indicated in Figures 2 and 3, with the seats either (A) inclined downwardly and inwardly or (B) situated in horizontal planes. With this end in view, selectively useable hook elements 22 and 24 are provided on the under surfaces of the seats, preferably integrally formed with the hinging leaves 18, as shown. The hook elements 22 and 24 are spaced transversely of the seats and may be staggered as illustrated best in Figure 4. The staggered arrangement of the hook elements is proposed merely to facilitate the manufacture thereof. Bracing props 26, which are generally C-shaped, have their transverse end portions pivoted, as indicated at 28, to and between the parallel limb portions of each U-shaped leg frame 10. These props 26 are selectively insertable in the hook elements 22 and 24. When they are inserted in the hook elements 22 (Figure 3), the seats 16 will have their transverse axes horizontal, and when they are engaged with the hook elements 24, the seats will be inclined as illustrated in Figure 2. It should also be noted that the said props have portions 30 extending on the sides of the leg members remote from the seats. These extending portions 30 may be inwardly turned at their terminals as indicated in Figures 1, 4 and 5, so that when these extending portions 30 are used as indicated in Figure 2 to engage the ground, the weight of the complete assembly is supported on these extending portions 30 and the bight portions 12 of the leg frames 10 are thus elevated above the ground and serve as foot rests, all as clearly indicated in Figure 2. A pair of chains or similar cable elements 32 are terminally connected to and between intermediate portions of the leg frames 10 to limit the outward pivotal movement of the latter about the assembling and hinging rod 14.

A pair of opposing table top panels 34 serve as

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such when used as indicated in Figure 3, these same panels 34 functioning as back rests when the device is used as a double bench, as shown in Figure 2. Each panel 34 carries a pair of arms 36 which are rigidly secured to the under surfaces of the panels, preferably near the transverse ends of the panels, and the upper surfaces of the arms 36 are coplanar with the under surfaces of the panels 34. These arms 36 also project beyond the adjacent inner longitudinal edges of the panels 34 and it will be readily understood how these arms serve to hold the panels 34 in coplanar relation when the panels are brought together as indicated in Figure 3, thus serving as a table top. Each of the arms 36 is provided with a longitudinally extending slot 38 to receive the hinge pin 14. It should be noted that the slot 38 need not be as long as the complete arms 36 and these arms may also have attachment plates 40 which are screwed or otherwise secured to the under surface of the panels 34.

When the panels are disposed in downwardly diverging relation as in Figure 2, the ends of the panels engage the adjacent limb portions of the U-shaped leg members 10 and these panels 34 must, therefore, be slightly longer than the width of the U-shaped leg frames. In this respect, it might be well to note that the device is symmetrical with respect to a plane including the section line 4—4 in Figure 3, except that the U-shaped leg frames are preferably identical and are staggered slightly to facilitate the attachment of the ends of the limbs or legs by the assembling and hinging rod 14 and also to allow for a slightly more compact folding of the device.

When the device is used as a table, pairs of elongated stay links or members 42 are used to secure the panels 34 against rocking on the rod 14, these stays 42 being pivoted on the attachment plate 40 of the arms 36 and being provided with hook ends 43 adapted to be inserted in keeper holes 44 in intermediate portions of the limbs of the U-shaped leg frames 10, whereby the table comprised of the panels 34 may be steadied and held in a horizontal position, as indicated in Figure 3.

When it is desired to collapse or fold the device, the stays 42, if secured in the keeper holes 44, are released, the panels 34 are pulled apart by hand and pivoted and swung downwardly into the positions indicated in Figure 2, whereafter the seats 16 are pivoted upwardly to release the props 26, and all the elements are then capable of assuming positions as indicated in Figure 5. In Figure 6, there is illustrated a modified form of bracing, this simplified modification being identified by the numeral 48. It will be noted that, as before, the brace 48 is pivoted at 50 upon intermediate portions of the U-shaped leg members 10, but this simplified brace has no extending portion 36. Obviously, the brace 48 cannot be used as indicated in Figure 2, but the cost of the complete device is somewhat lessened.

The operation of this invention has already been referred to explicitly and completely in the foregoing description of the mechanical details of this invention, taken with the drawings and the above recited objects of the invention. It will be clear that all the recited objects are amply achieved by this invention. Further description would therefore appear unnecessary.

Minor variations from the embodiment illustrated and described may be resorted to within the spirit and scope of this invention and the

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drawings should be considered as illustrative rather than limiting.

Having described the invention, what is claimed as new is:

1. A convertible portable folding structure selectively usable as a table on the one hand and as a bench on the other hand comprising an elongated assembling and hinging rod, a pair of substantially duplicate complementary panels, said panels being adapted to serve in the capacity of table top components or, alternatively, as back-rests, arms attached to the undersides of the respective transverse end portions of said panels, said arms having extending end portions formed with elongated loops, said loops being hingedly and slidably connected with said rod, a pair of substantially duplicate opposed U-shaped leg frames, each leg frame embodying limbs hingedly connected to respective end portions of said rod and bight portions which are adapted to rest on the ground or other supporting surface, means for maintaining said panels in table forming position, said means comprising stay members pivotally connected to the respective end portions of said panels, said stay members being releasably engageable with coacting portions of the corresponding limbs of said U-shaped leg frames, a pair of opposed seat members, and means operatively connecting said seat members with intermediate portions of said limbs.

2. The structure specified in claim 1, wherein said last mentioned means embodies selectively usable keeper hooks attached to the respective undersides of the seat members, and props hingedly attached to coacting limbs, said props having portions selectively engageable with said hooks to permit said seat members to be disposed in corresponding horizontal planes or tilted upwardly and downwardly into slightly converging relationship.

3. A portable folding bench construction comprising an elongated assembling and hinging rod, a pair of opposed U-shaped leg frames, each leg frame including a bight portion and limbs extending laterally from said bight portion, said limbs being hingedly attached to the end portions of said rod, a pair of panels having slotted arm portions slidably and hingedly connected to complementary end portions of said rod, said panels being supported on the limbs of the respective leg frames and said leg frames being disposable in outwardly and downwardly diverging relationship, flexible elements connecting the intermediate portions of the corresponding limbs of the leg frames, C-shaped props hingedly mounted between the limbs of the respective leg frames, a pair of seat members, means hingedly attaching said seat members to the limbs of the respective leg frames, and keeper hooks on said seat members, said props having portions releasably engageable with the respective keeper hooks.

4. In a structure of the class described, an inverted C-shaped prop having end limbs with turned-in terminals adapted to rest on a fixed supporting surface, a relatively large U-shaped

leg frame having a bight portion adapted to rest on said supporting surface and limb portions disposed laterally to said bight portion, the end limbs of said prop being hingedly connected to intermediate portions of the limb portions of said leg frame, a folding seat board spanning the space between the limb portions of said leg frame, hinging leaves fixed to the underside of the respective transverse end portions of said seat board, said leaves being hingedly attached to the respective limb portions of said leg frame, said hinging leaves having selectively usable keeper hooks, the bight portion of said prop being separably and selectively connectible with said hooks, a rod connected to and extending between the terminal ends of the limb portions of said leg frame, and a panel member having arms attached to its ends, said arms having loop portions slidably and hingedly attached to the respective end portions of said rod, and a stay member pivotally secured to each end portion of said panel member and engageable with the adjacent limb to cooperate with said rod and to retain said panel in table-forming position.

5. A portable folding table comprising an elongated hinging and assembling rod, a pair of normally outwardly and downwardly diverging U-shaped leg frames, each leg frame having a bight portion and limb portions and the limb portions being hingedly connected to the end portions of said rod, table top panels having longitudinal edge portions adapted to abut each other and provided with transverse arms adjacent their opposite ends, said arms having loop portions adapted to cooperate in slidable overlapping relationship and slidably and hingedly attached to the end portions of said rod, means for retaining said panels in table-forming position, said means comprising depending stay members hingedly attached to the respective end portions of said panels and having lower end portions releasably connectible with the limb portions of said leg frames, a pair of opposed horizontally disposed seat members spanning the spaces between the limb portions of the respective leg frames and having means at their respective ends hingedly attached to corresponding limb portions on said leg frames, and inverted C-shaped props hingedly mounted between the respective limb portions of the respective leg frames, said props being engageable with said supporting surface, and hook means on the undersides of the respective seat members, said props being selectively and separably engaged with said hook means.

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