Aug. 4, 1953 C. F. HOFFAR 2,647,562

FOLDABLE TABLE AND SEAT ASSEMBLY

Filed Nov. 6, 1950 3 Sheets-Sheet 1

Fig. 1.

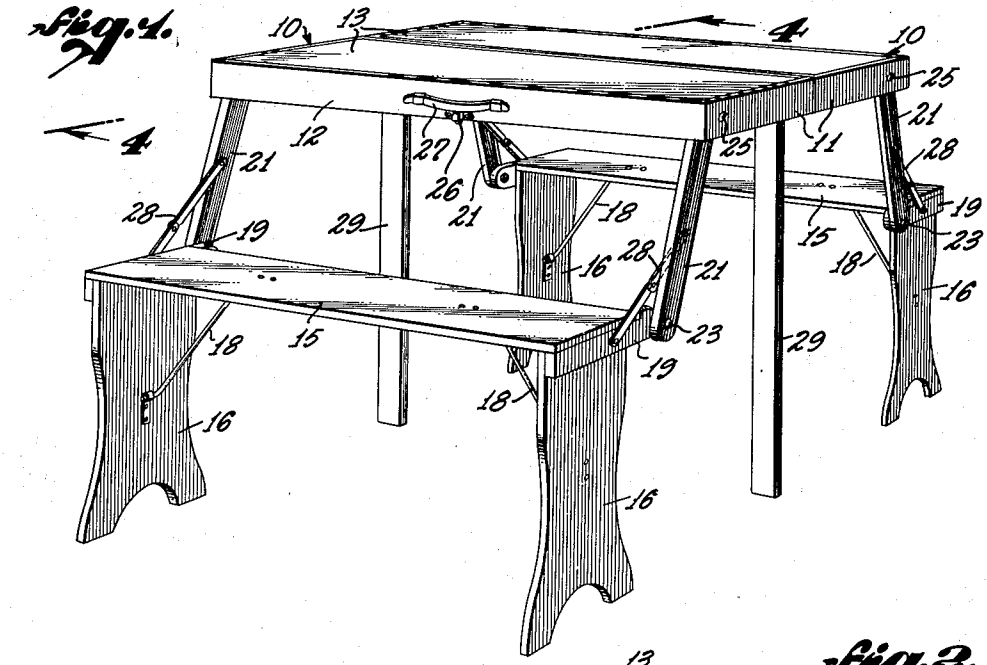



Fig. 2.

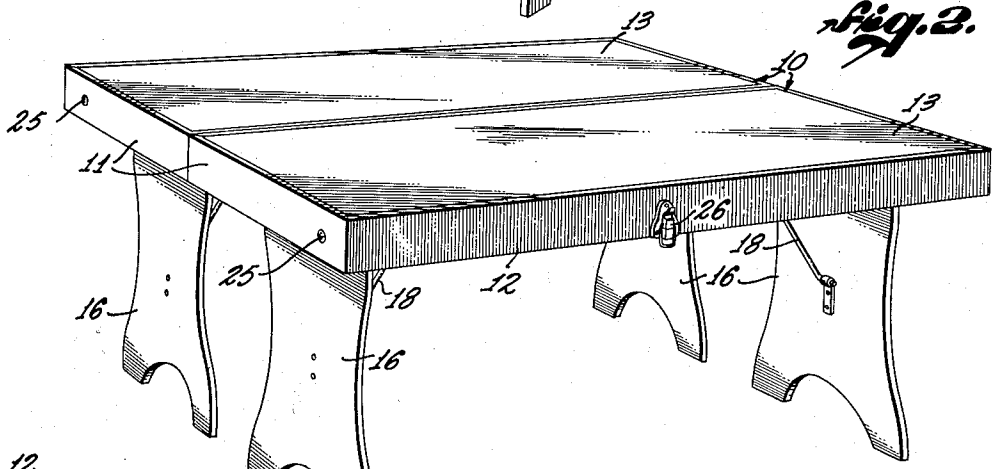
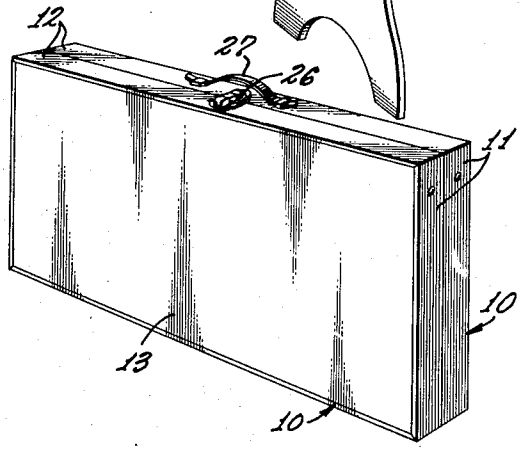



Fig. 3.

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FOLDABLE TABLE AND SEAT ASSEMBLY

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Fig. 4.

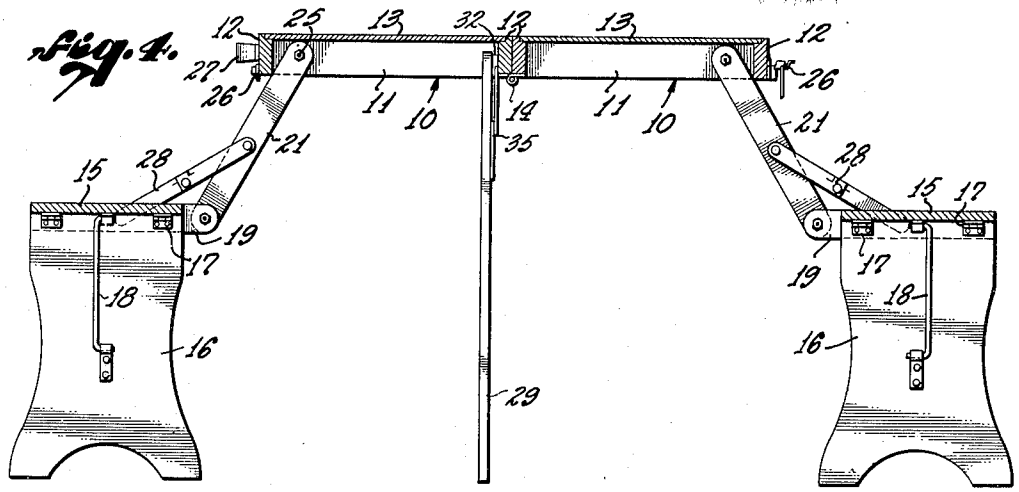



Fig. 5.

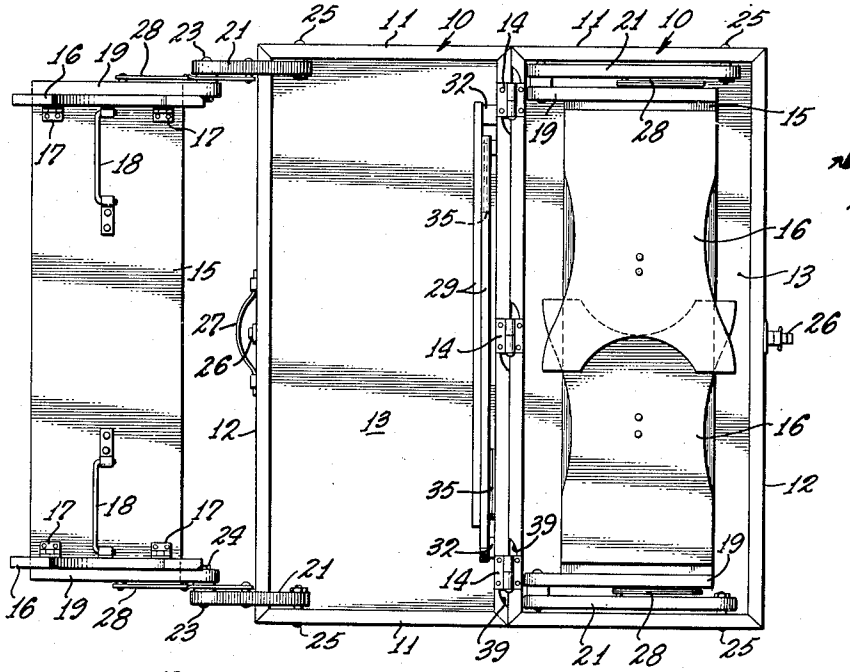
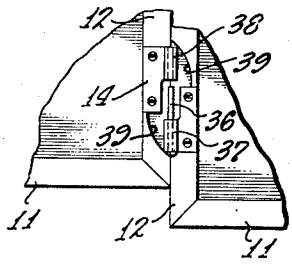



Fig. 6.

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FOLDABLE TABLE AND SEAT ASSEMBLY

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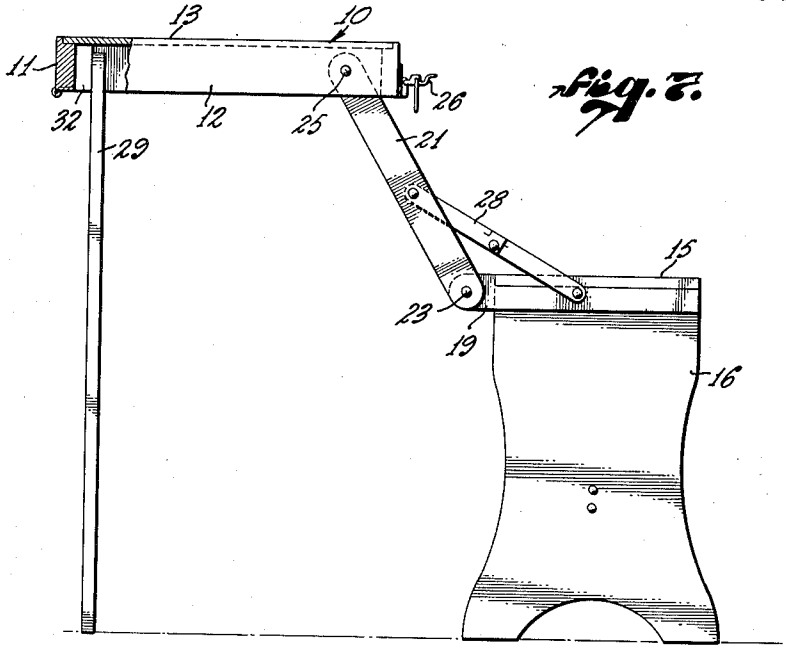


Fig. 7.

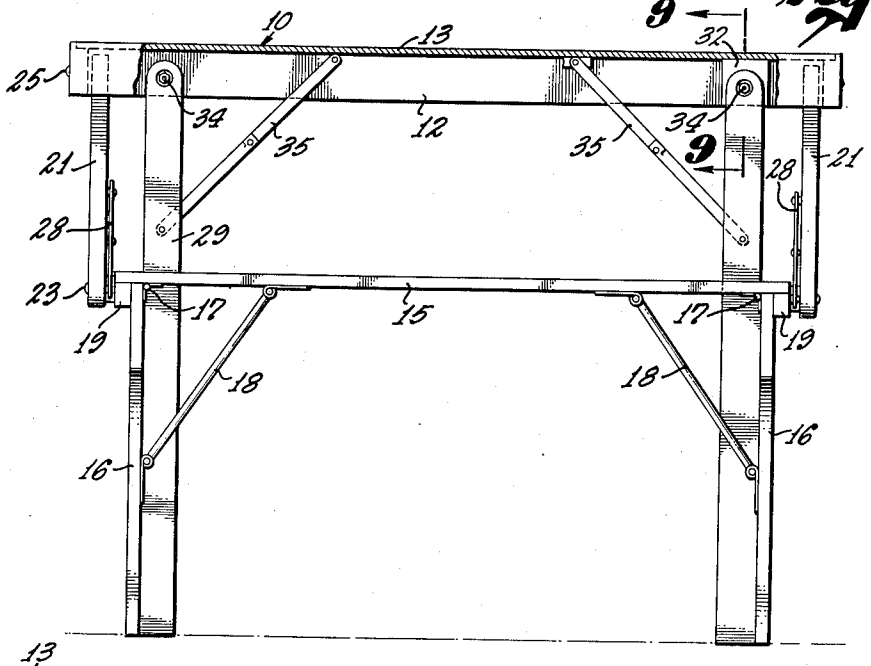


Fig. 8.

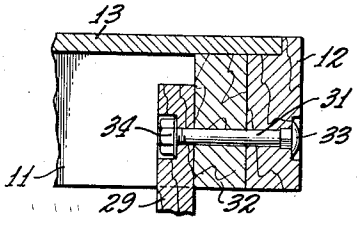


Fig. 9.

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# UNITED STATES PATENT OFFICE

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## FOLDABLE TABLE AND SEAT ASSEMBLY

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Application November 6, 1950, Serial No. 194,224

5 Claims. (Cl. 155—124)

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This invention relates to foldable table and seat assemblies and more particularly to one in which the seats and their supports are so interconnected as to be compactly folded into a pair of hingedly interconnected receptacles which, when opened, constitute the table top, and which, when closed, constitute an enclosure for the seats and their supports.

In the table and seat assembly of the present invention the seat members are rigidly supported by foldable legs and in turn rigidly support the substantially rectangular table top at the four corners thereof. This support is afforded by a single rigid link arranged at each corner of the table top, the opposite ends of each link being pivotally connected to a corner and one end of a seat member, respectively. As the table top of the present invention is supported at the four corners thereof and not merely at the opposite sides intermediate the corners, the same is far more rigid in use and will take substantially heavier loads than the tables of prior assemblies.

The seat members and the links are held against relative movement once the said members are moved with the links to position at opposite sides of the table to thus provide a very rigid table and seat arrangement. To afford adequate support for the opposite ends of the table top formed by the hingedly interconnected receptacles, a pair of auxiliary legs may be pivotally mounted to at least one receptacle, which legs when swung downwardly will firmly support the opposite ends of the table top.

The link arrangement interconnecting the table top and seat members of the present invention permit the table and seat members to fold into a very compact carrying case. As the links fold into the receptacles to positions intermediate the ends of the seat members and the end walls of the receptacles, the supporting surfaces of the seat members, when the latter are moved with the links into the receptacles, are in face-wise engagement with the under-surface of the table top formed by the two receptacles. In this folded position the partially collapsed or folded assembly forms a relatively large table supported at a level substantially that of the seat members. The table in this use of the assembly is directly supported by the seat members and their supporting legs and forms a table of a height substantially that of a conventional coffee table. The table furthermore, when so supported, is well adapted to be used at the beach or other recreational area where the users of the table prefer to sit or recline on the ground adjacent the table.

A further feature of the present invention re-

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sides in the fact that the hinge means interconnecting the two receptacles are such that by slight manipulation the two receptacles forming the table top may be separated. It is thus possible with the assembly of the present invention to form two smaller tables of a height substantially that of a conventional coffee table. The two smaller tables formed when the receptacles are disengaged are very rigid for the under surface of each receptacle is directly engaged and supported by the upper planar surface of the attached seat member.

Thus with the table and seat assembly of the present invention the table and seat members may be completely unfolded to provide a table having arranged along opposite sides thereof seat members which through the four links rigidly support the table above and between the seats. With the table and seat members so arranged, seating accommodations are provided such as are had with a conventional picnic table.

As the receptacles may be separated, an article of furniture in the nature of a writing desk may be had when desired merely by detaching the receptacle to which the auxiliary legs are secured from the other receptacle, after the seat member thereof and auxiliary legs are moved into their supporting position. The remaining receptacle, if desired, can be used as a small table in the nature of a coffee table as above described.

When the table is to be folded for transportation and storage, the legs of the seat members, after the seat members have been swung into their storage position within the receptacles, are merely folded against the undersurface of the seat members and the two receptacles moved together to form a carrying case. A latch or similar element holds the two receptacles together and the case so formed is carried by a handle fixed to one side wall of a receptacle.

Other features and advantages of the present invention will be hereinafter apparent from the following detailed description thereof, particularly when taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view showing the table and seat members in their fully extended position;

Figure 2 is a perspective view showing the table in its partially open position in which the table top is directly supported by the seat members;

Figure 3 is a perspective view of the table and seat arrangement completely folded for transportation or storage;

Figure 4 is a sectional view taken along line 4—4 of Figure 1;

Figure 5 is a view taken from the underside of the table and seat assembly showing one seat member fully extended with the other seat assembly folded within its receptacle;

Figure 6 is a fragmentary view in elevation of one of the hinge elements used to interconnect the two receptacles showing the parts in disengagement;

Figure 7 is an elevational view, partly in section, of the receptacle to which the auxiliary legs are mounted with the seat element thereof fully extended;

Figure 8 is another elevational view of the receptacle shown in Figure 7; and

Figure 9 is a section taken along 9—9 of Figure 8.

The table and seat assembly of the present invention, referring now to the drawing and more particularly to Figure 1 thereof, comprises a pair of shallow or tray-like rectangular receptacles 10 of identical construction, size and shape. The receptacles 10 may be formed of any material desired and each comprises end and side walls 11 and 12, respectively, and a transverse wall 13 presenting oppositely facing plane surfaces. The receptacles 10 are interconnected by a plurality of hinge members 14, as best seen in Figure 5, to permit the two receptacles to be moved or swung together to form the carrying case shown in Figure 3. The hinge elements 14 also permit the two receptacles to be swung away from each other to bring the outer planar surfaces of the transverse walls 13 into coplanarity to form a continuous surface or table top, as clearly illustrated in Figures 1, 2, and 4.

The table top formed by the two receptacles 10 is supported above and between a pair of seat assemblies each comprising a planar seat element 15 and a pair of supporting legs 16. The legs 16 are hingedly connected to the undersurface of the seat element 15 by hinges indicated by the reference character 17. The legs 16 herein shown as substantially solid panels obviously can take any particular shape desired. Each leg is rigidly held against movement from its extended position by a brace link 18, each comprising a rod having one end fixed, but pivotally mounted to the undersurface of the seat element 15 and having the opposite end adapted for engagement with a small bracket carried by the inner surface of a leg 16. Once this latter end of each link is engaged with the bracket, the link will hold the leg in the desired extended position. The hinge members 17 permit the legs to be swung from a position in which the same underlie the seat element 15 to a fully extended supporting position such as shown in Figure 3, in which position the legs are, as above explained, rigidly braced by the links 18.

Each seat element 15 carries at the opposite ends thereof frame members 19 of a length slightly greater than the width of the seat elements 15. The one end of an elongate rigid link 21 is pivotally secured to the projecting end of each frame element 19, the opposite end of each link 21 being pivotally connected to an end wall 11 of the contiguous or adjacent receptacle 10. The pivotal means interconnecting the one end of the link 21 with the frame element 19 may comprise a headed pintle member 23 passed through aligned openings formed in the ends of the frame 19 and link 21. The end of the pintle member 23 opposite to the headed end is threaded and receives a nut 24. The pivotal connections 25 between the links 21 and the end walls 11 may



consist of the identical conventional pivot means.

The hinge connection between the receptacles 10 and the manner in which the seat assemblies are pivotally connected to opposite sides of the table formed by the receptacles, permits the table and seat assembly of the present invention to be compactly folded into the carrying case shown in Figure 2. Any conventional fastening means, such as indicated at 26, may be used to hold the two receptacles in their fully closed position. A handle member 27 may be secured to one receptacle for conveniently carrying the case formed by the closed receptacles 10.

When the table is to be used, the fastening means 26 are disengaged and the two receptacles are swung apart to a position in which the adjacent side walls 12 of the two receptacles 10 are in facewise engagement. In this position the outer planar surfaces formed by the transverse walls 13 will be coplanar, as clearly shown in the drawing. The legs 16 are now swung outwardly from the seat element 15 and the brace links 18 secured to hold the legs against pivotal movement. The two receptacles can now be inverted to allow the seat elements 15 to pivotally move out of the receptacles and into the position shown in Figure 1.

Each seat element 15 is rigidly held against movement relative to the elongate links 21 by a pair of brace links 28 arranged at opposite ends thereof, each brace link comprising a toggle link, the free ends of which are pivotally connected to a frame element 19 and a link 21, respectively. Stop means carried by each toggle limit movement of the same and act to hold the brace links in fully extended position.

It will be seen, referring now to Figure 4, that pivotal movement of each of the links 21 is limited by the opposite side walls 12 of the receptacles and the engagement between the upper ends of the links 21 with the side walls tends to hold the table in a rigid supported position. The table and seat assembly in this fully extended position affords seating accommodations such as are found with conventional picnic tables for the seat elements form benches arranged along the opposite side of the table. It should be noted that the links 21 are connected to the table top at substantially the four corners thereof and thus will, when the seat assemblies are moved to the position shown in Figures 1 and 4, rigidly support the table above the seat assemblies and the table top will consequently take relatively heavy loads applied even at the corners thereof.

If it is desired to more fully support the table top formed by the receptacles 10, means may be provided for supporting the opposite ends thereof. In the illustrated embodiment of the present invention this means comprises a pair of auxiliary legs 29 hingedly mounted at their upper ends to the opposite ends of the wall 12 of one of the receptacles 10. Any means desired may be used to hingedly mount the legs 29 to the inner surface of the wall 12 and in the illustrated embodiment of the present invention this means, as best shown in Figure 9, comprises an elongate bolt-like member 31 mounted in a passageway formed in a bearing block 32, fixed to the inner surface of the wall 12, and the wall itself. The opposite ends of the passageway are enlarged to receive, respectively, the head 33 of the member 31 and a securing element such as a nut 34 threadedly mounted to the one end of the member 31. It will be seen, referring now to Figure 5, that the bearing blocks 32 properly space the legs 29 so

that the same can be moved into a folded position in which the legs are disposed in a side by side relationship.

To lock the legs in their extended position, brace toggle links **35** are preferably used and these toggle links may be similar to the brace links **28**, with the free ends thereof connected, respectively, to a leg and the bearing block associated with the leg. These toggle or brace links, when the legs **29** are folded into the receptacle, move with the leg into the position shown in Figure 5.

When it is desired to collapse the table and seat assemblies for transportation or storage, the folding operations are reversed to bring the seat assemblies into the receptacles **10** to permit the same to be closed to again form the carrying case shown in Figure 2.

As the seating elements **15** are of a length slightly less than the length of the receptacles **10**, the seat assemblies, when the same are swung inwardly about the pivotal connections **25** and **23**, are movable to a position, referring now to Figure 2, in which the upper surface of the seat elements **15** are in facewise engagement with the undersurface of the transverse walls **13** of each receptacle. In this position the links **21** lie closely adjacent to the end walls **11** of the receptacle, as clearly shown in Figure 5, and the frame members **19** are arranged substantially parallel to the links **21**.

If the legs **16** are allowed to remain in their fully extended position, a table is had, referring now to Figure 2, which is rigidly supported directly by the seat assemblies a distance above the supporting surface substantially equal to the length of the extended legs **16**. The table top formed by the two receptacles **10** will, it is quite clear, be very rigidly supported, for as above explained, the particular link arrangement permits the supporting surface of the seat elements **15** to be moved into facewise engagement with the undersurface of the transverse walls **13**. The table in the adjusted position shown in Figure 1 is particularly adapted to be used at a beach or other recreational area where informal seating arrangements are desired.

In the now preferred embodiment of the present invention, each of the hinge members **14** is preferably so made that the pin **36** is fixedly mounted to the barrel element **37** and is removably mounted in the other barrel element **38**. As the adjacent walls **12** are cut away as indicated at **39**, it is possible to longitudinally move one receptacle relative to the other to withdraw the pin **36** from the barrel element **38**, the cut away portion of the wall **12** allowing movement of the barrel element **37**. Once the pins **36** have been withdrawn from the barrel elements **38**, the two receptacles can be moved apart to form two tables of a height substantially that of a conventional coffee table. Thus for home use where it is desired to serve refreshments or other food articles from tables resembling coffee tables the table of the present invention provides these facilities.

As the receptacles can be separated, it is possible, referring now to Figures 7 and 8, to provide an article of furniture resembling a small writing desk. Such an article of furniture can be had by swinging the auxiliary legs **29** into their operative position in which they now support the one edge of the receptacle **10** to which they are connected. The seat member **15** is then swung to its fully extended position with its links **21**, after which the brace members formed by the links **28** can be set to hold the seat against movement relative to the links **21**. The one receptacle and its associated elements in this use of the device of the present invention forms a very rigidly supported writing desk.



Although the now preferred embodiment of the present invention has been shown and illustrated herein, it is to be understood that the invention is not to be limited thereto, for it is susceptible to changes in form and detail within the scope of the appended claims.

I claim:

1. In a device of the type described, a pair of benches, each including a top portion having a planar upper seating surface and foldable legs at the ends of said top portion; a pair of receptables each including a transverse wall and end and side walls; a plurality of hinge elements spacedly fixed to a side wall of each receptable; means carried by the hinge elements fixed to one receptacle for releasably interengaging with the hinge elements of the other receptacle for hingedly interconnecting said receptacles whereby the same can be moved together to form a case and moved apart to a position in which said transverse walls thereof are coplanar to form a table top; elongate, rigid links pivotally interconnecting opposite ends of each bench to opposite ends of the receptacle adjacent each bench, said links, when said benches are arranged at opposite sides of said table top, supporting said top from said benches; said benches being arcuately movable from the said positions at the opposite sides of said table top to positions in which the planar surfaces thereof are facewisely engaging the undersurfaces of said receptacles, whereby said table top is directly supported by said benches; said links pivotally moving during the aforesaid arcuate movement of said benches to positions intermediate the ends of said benches and the end walls of said receptacles; release of said interengaging means of the hinge elements permitting each receptacle and its bench to be used as a separate table having a level substantially that of its bench.

2. A structure of the character described, comprising: two substantially rectangular receptacles, each having a longitudinally and transversely extending wall presenting oppositely facing plane surfaces, a pair of end walls, and a pair of side walls; hinge means releasably interconnecting adjacent side walls of said receptacles, whereby said receptacles when hingedly interconnected can be moved together to form an enclosure and moved apart into a side by side relationship to form a table top; a pair of elongate legs hingedly mounted to the opposite ends of the side wall of one of said receptacles; a pair of seat members adapted to be arranged at opposite sides of said table top; legs foldably connected to said seat members for supporting the same; four rigid links; means carried by the opposite ends of each link for pivotally interconnecting the opposite ends of each seat member to the outer ends of the end walls of the adjacent receptacle for supporting the four corners of the table top in one position of use thereof between and above said members; said elongate legs being movable into an extended position to support the opposite ends of said table top; the receptacle to which said elongate legs are mounted when said hinge means are released forming with its seat member an article of furniture having a narrow table; said links arcuately movable with said seat members into positions within said receptacles in which the

seating surfaces of said seat members are in facewise engagement with the underside surfaces of the first named walls of said receptacles and said links are disposed intermediate the ends of said seat members and the end walls of said receptacles whereby the table top formed by the outer plane surfaces of said receptacles is supported in a second position of use thereof at a relatively lower level than in said first named position of use.

3. In a device of the type described, a pair of benches, each including a top portion having a planar seating surface and foldable legs at the ends of said top portion; a pair of receptacles each including a longitudinally and transversely extending wall and end and side walls connected therewith; releasably interengaging means carried by adjacent side walls of said receptacles adapted when interengaged to hingedly interconnect the two receptacles whereby the same can be folded to form a case or be pivotally moved to a position in which the first named walls of the receptacle are coplanar to form a table top; an elongate, rigid link pivotally interconnecting each end of the benches to the corner of said table top adjacent each bench, said links, when said benches are arranged at opposite sides of said table top, supporting said top from said benches; said benches being arcuately movable from the said positions at the opposite sides of said table top to positions in which the planar surfaces thereof are facewisely engaging the undersurface of said receptacles, whereby said table top is directly supported by said benches; said links pivotally moving during the aforesaid arcuate movement of said benches to positions intermediate the ends of said benches and the end walls of said receptacles; release of said interengaging means permitting each receptacle and its bench to be used as a separate table.

4. A structure of the character described comprising: two substantially rectangular receptacles, each having a longitudinally and transversely extending wall presenting oppositely facing plane surfaces, a pair of end walls, and a pair of side walls; hinge means carried by a side wall of one receptacle and releasably engageable with hinge means carried by the side wall of the other receptacle for hingedly interconnecting said receptacles whereby the latter, when hingedly interconnected, can be moved together to form an enclosure and moved apart into a side by side relationship to form a table top; a pair of seat members adapted to be arranged at opposite sides of said table top; legs foldably connected to said seat members for supporting same; link means pivotally interconnecting the opposite ends of each seat member to the end walls of the receptacle adjacent thereto for supporting the four corners of the table top in one position of use thereof between and above said seat members; a pair of elongate legs pivotally mounted to the opposite ends of the side wall of one receptacle carrying said hinge means, said legs being movable from storage positions within said receptacle to extended positions for supporting opposite ends of said table top; means for holding each leg against accidental movement from said extended position; the receptacle to which said elongate legs are mounted when the hinge means thereof are disengaged from the hinge means of the other receptacle forming with its seat member an article of furniture having a narrow table; said link means arcuately movable with said seat members into positions within said receptacles in which the seating surfaces of said seat members are in facewise engagement with the undersurfaces of the first named walls of said receptacles and said link means are disposed intermediate the ends of said seat members and the end walls of said receptacles whereby the table top formed by the outer plane surfaces of said receptacles is supported in a second position of use thereof at a relatively lower level than in said first named position of use.

5. A device of the character described, comprising: a pair of seat members; supporting legs for said members; means hinging said legs to the seat members to fold thereagainst; a table top having a length slightly greater than the length of said seat members; said table top adapted to be arranged intermediate said seat members and comprising two aligned substantially rectangular receptacles each having a longitudinally and transversely extending wall and side and end walls; interengaging hinge means releasably interconnecting adjacent side walls of said receptacles for pivotal movement between an extended position in which said first named walls are coplanar to a folded position in which side and end walls are edge-to-edge to form an enclosure; a single elongate, rigid link of a length substantially equal to the width of each receptacle pivotally interconnecting each end of said seat members to an outer end of the end walls of the receptacle adjacent each member, said seat members being movable to positions in which said links support the table top formed by said receptacles in said extended position at the four corners thereof in an elevated position above said members; releasable means for holding said links against pivotal movement relative to said seat members to rigidly hold said table top in said elevated position; said links being pivotally movable about the connection between the same and said end walls, upon release of said holding means, to arcuately guide said seat members to positions in which each seat member is facewisely engaging the undersurface of the first named wall of the receptacle to which it is pivotally connected and is directly supporting the engaged receptacle whereby said table top is supported at a relatively low level; each of said links in said last named position of said table top being disposed within said receptacles intermediate the end walls thereof and the opposite ends of the seat member disposed therein; said receptacles being separable upon disengagement of said hinge means, whereby each receptacle when directly supported by the said seat member connected thereto forms with said seat member an independently usable table; a pair of auxiliary legs; means for pivotally connecting an end of each leg to the side wall of one of said receptacles, the receptacle to which said auxiliary legs are connected, when separate from the other of said receptacles, forming with said auxiliary legs and the extended seat member connected thereto an independently usable article of furniture presenting a seat member and an elevated rigidly supported writing surface.

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