March 27, 1951 G. W. ANDERSON 2,546,812

KNOCKDOWN TABLE FURNITURE

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Fig. 1

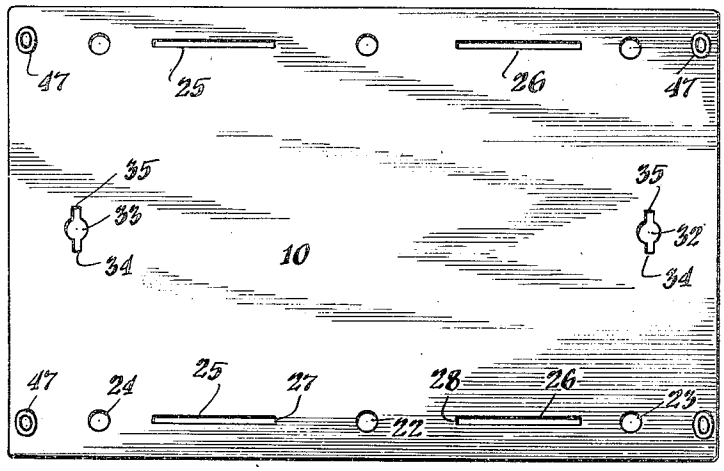


Fig. 2

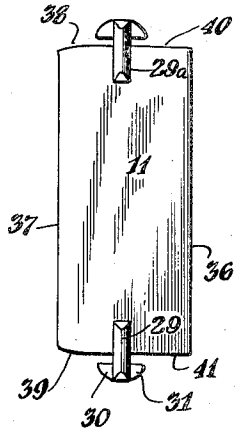


Fig. 3

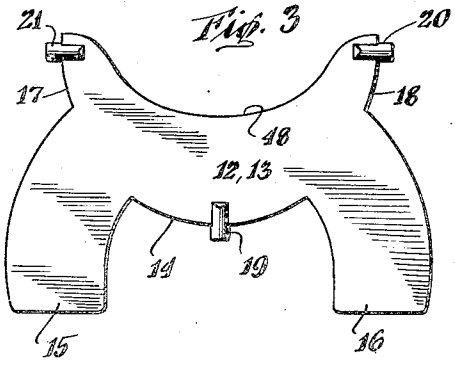


Fig. 4

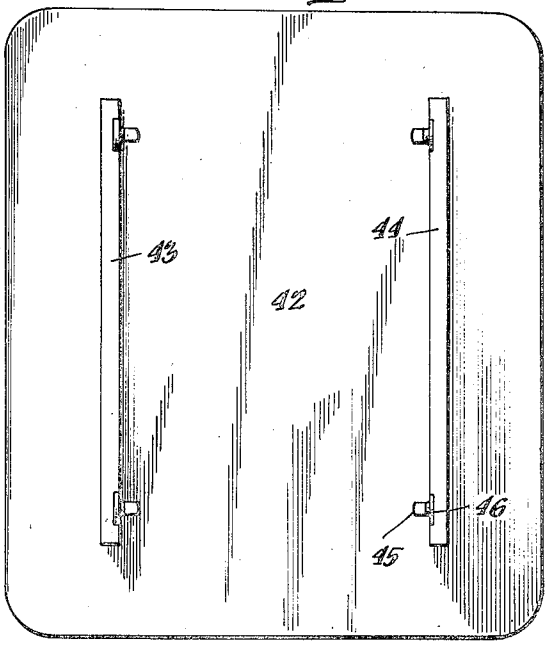
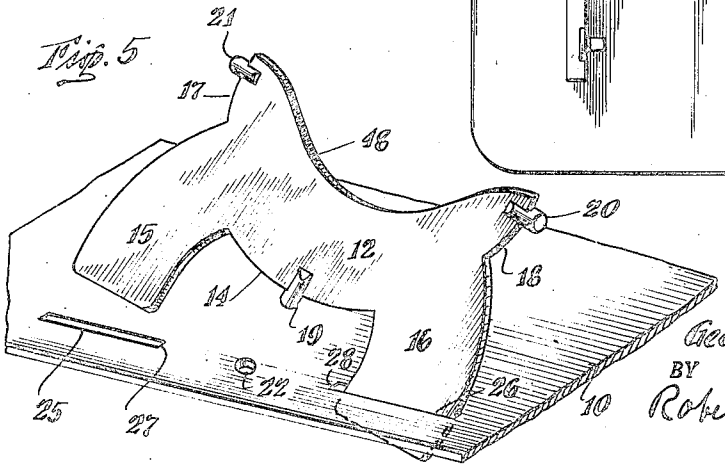


Fig. 5



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Fig. 6

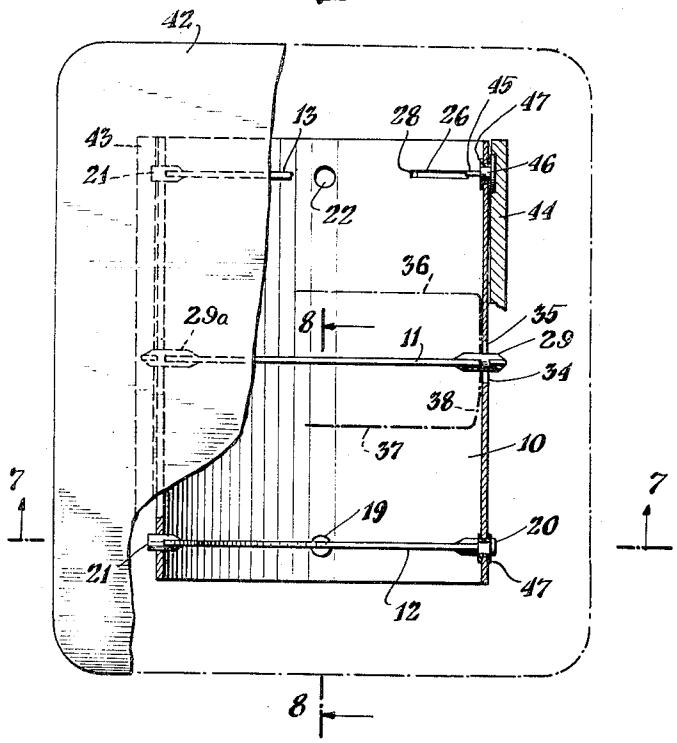


Fig. 7

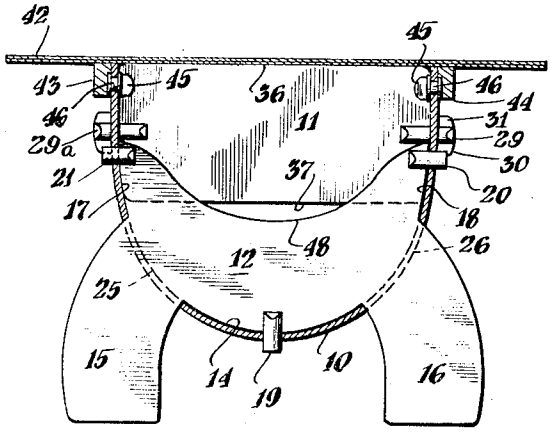
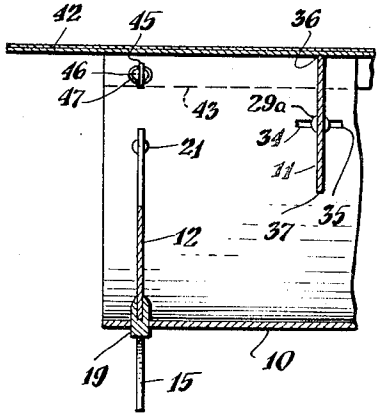


Fig. 8



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KNOCKDOWN TABLE FURNITURE

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Application April 5, 1949, Serial No. 85,583

6 Claims. (Cl. 311—35)

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This invention relates to knock-down furniture.

Among the objects of the invention is to provide a sturdy piece of furniture, such as a table, light in weight and having a minimum number of parts which can be easily assembled together or taken apart for storage purposes.

The invention is particularly suitable for fabrication from resilient sheet material such as thin plywood. The structure includes four separable pieces consisting of a body structure, two similar end panels and a stretcher. The body structure is formed from a flat piece of sheet material which is bowed to provide a lower curving wall and two upstanding side walls. The leg structure for the table is provided by two end panels which are parallel to each other and have projections which slidably fit into openings in the body structure and hold the panels normal to the surface of the body structure. The end panels have curved edges above and between the legs of the end panels which are shaped to conform with the bowed configuration of the body structure. A stretcher extends between the upstanding side walls and holds the side walls from their natural tendency to flex away from each other. The side walls are constrained by cleats carried by the stretcher. The cleats have wings which are engageable in slotted openings in the side walls when the stretcher is mounted in place and the side walls are locked with reference to the stretcher by rotating the stretcher and causing engagement of the wings of the cleats with the exterior or outside surfaces of the side walls. A table top is provided with means for engaging the upper portions of the side walls of the body structure.

The novel features which are characteristic of this invention will be better understood by referring to the following description taken in connection with the accompanying drawings in which a specific embodiment thereof has been set forth for the purposes of illustration.

In the drawings:

Fig. 1 is a development of the body structure;

Fig. 2 illustrates the stretcher;

Fig. 3 illustrates one of two similar end panels;

Fig. 4 is a view of the table top as seen from its underside;

Fig. 5 illustrates one manner of engaging an end panel with the sheet constituting the body structure;

Fig. 6 is a plan of the assembled table with portions broken away;

Fig. 7 is a vertical section on line 7—7 of Fig. 6; and

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Fig. 8 is a vertical section on the line 8—8 of Fig. 6.

The piece of furniture illustrated in the drawing includes a body structure 10, stretcher 11, and two end panels 12 and 13, each of which may be stamped or die-cut from sheet material. The various sheets are provided with fastening means in the form of studs and cleats which are engageable in openings and no elements detachable from the sheets are required. The various openings are all located in the sheet of material for forming the body structure 10, Fig. 1, and these openings may be cut or punched out when the sheet is formed. The construction is particularly suitable for manufacture from plywood or other sheet materials having similar characteristics.

Each of the end panels 12 and 13 has a lower curved edge 14 between extensions 15 and 16 and curved edges 17 and 18 beyond the extensions 15 and 16 respectively. The edges 14, 17 and 18 have such configuration as to conform with the interior surface of the body structure 10 when the sheet constituting the body structure is bowed and bent to a natural curve finishing in substantially parallel planes as illustrated in Fig. 7. The edges 14, 17 and 18 preferably contact with the interior surface of the body structure 10 so as to provide firm intersecting areas between the respective end panels 12 and 13 and the trough-like area of the body structure.

Each panel is provided with three studs 19, 20 and 21 which are adapted to engage openings 22, 23 and 24, respectively, in the body structure when the panel is mounted in position. These studs may be formed from pegs having slots engageable with the edge and opposite surfaces of the panels. The studs are fastened to the panels by gluing or nailing.

The extensions 15 and 16 of each of the end panels provide the legs for the article of furniture illustrated in the drawing. In assembling the end panels the extensions 15 and 16 are inserted in openings 25 and 26 respectively of the sheet material forming the body portion 10. These openings are in the form of slots having such width as to accommodate the thickness of the material of the panels and no greater length than necessary to accommodate the extensions 15 and 16. The inner ends 27 and 28 of the notches are equally spaced from the axis of the hole 22 which is on the center line of the body structure 10, and this spacing is equal to the length of the curved edge 14 of the end panel.

Each end panel is mounted in place first by introducing one of the extensions 16 in the open-

ing 26 (Fig. 5) and then bowing the body structure 10 as the other extension 15 is inserted in the slot 25. As the bowing of the body structure is continued the stud 19 is caused to enter the opening 22 and the studs 20 and 21 are directed for entry into the openings 23 and 24, respectively. With both of the end panels partially engaged with the body structure, the stretcher 11 is placed in position between the upper side walls of the body structure.

The stretcher carries two cleats 29 and 29*a*, each of which includes rounded stems fastened to the stretcher, and a pair of wings 30, 31, spaced from the end edge of the stretcher sufficiently to accommodate the thickness of the material of the body structure between the wings and the stretcher. The cleats 29 and 29*a* are adapted to pass through openings 32 and 33, respectively, in the side walls of the body structure. These openings have slots 34 and 35 for accommodating the wings 30 and 31 when the cleat is being inserted in the opening. The stretcher is disposed with its broad surface in a horizontal position (Fig. 6) when the cleats are being engaged in the openings 32 and 33, and the stretcher is then rotated on the axis of the cleats to a vertical position as illustrated in Fig. 7 to lock the stretcher in place. The introduction of the cleats into their respective openings is accomplished when the studs 20 and 21 of the end panels enter their respective openings 23 and 24. When the stretcher has been turned to a vertical position the inner surfaces of the side portions are brought into firm contact with the curving edges 14, 17 and 18 of the end panels and the end panels are locked in place.

The stretcher forms a beam whose upper edge 36 may be in the plane of the upper edges of the side wall portions of the body structure. The lower edge 37 of the stretcher is in a plane below the upper terminals of the curved edges 17 and 18 of the end panels so as to provide a vertical overlapping relationship of the lateral-bracing edge portions of the end panels and stretcher. In order to accomplish this the lower portions 38 and 39 of the end edges 40 and 41 of the stretcher are shaped to conform with the interior curving surface of the body structure.

As thus far described the structure has utility as a trough for receiving articles such as papers, magazines, etc., but in its preferred form it is intended that the structure be completed in the form of a table. For that purpose a table top 42 is provided with two rails 43 and 44 which are attached to the under side of the table top in parallel relationship and spaced from each other sufficiently to engage the upper side walls of the body structure 10 as illustrated in Fig. 7. In view of the fact that the upper edges of the side walls are tractable, the table top will remain in place, but it is preferred to provide fastening means for securing the table top to the body structure. The fastening means may constitute a plurality of rotatable wings 45 each of which is fastened to a rail by a post 46. The upper portions of the body structure are provided with a like number of elliptical eyelets 47 for receiving the wings and posts of the fastening elements. These fastening elements are all of a common construction having rotatable wings for engaging eyelets when the wing is turned 90°. The fastening means are inserted in the several eyelets 47 by slightly bending the upper portions of the side of the body structure towards each other and then releasing them.

The upper edge 48 of each of the panels may be shaped in any manner desired. If this upper edge 48 is curved downwardly space is provided for permitting access to the trough-like interior of the body structure.

The construction described is well suited for fabrication almost entirely of plywood. Owing to the curved form of the sheet of plywood which constitutes the body structure and the close interlocking relationship therewith of the end panels and stretcher, a very strong construction may result even though all of the separable parts are made of plywood of a gauge as small as one-eighth of an inch. Consequently, a table or other article of furniture is obtainable which is very strong with respect to its lightness of weight.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the specific description herein be deemed illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the particular showing herein to indicate the scope of this invention.

What is claimed is:

1. A knock-down piece of furniture comprising a sheet of resilient material bowed to form a body structure with a curved bottom portion and upstanding side portions, a stretcher extending between said upstanding side portions, means connecting each of said side portions to said stretcher, a panel adjacent each end of said body structure, each panel having edges conforming to curved interior surfaces of said body structure and a pair of extensions spaced from each other and passing through slots in said body structure to the exterior thereof, means for holding said panels with respect to said body structure, said holding means including studs carried by said panels and passing through holes in said body structure, and a table top supported by said structure.

2. A knock-down piece of furniture comprising a sheet of resilient material bowed to form a body structure with a curved bottom portion and upstanding side portions, a stretcher extending between said upstanding side portions and having its ends contacting with the interior surfaces of said upstanding side portions, means connecting each of said side portions to said stretcher, said connecting means including cleats attached to said stretcher and extending through holes in said side portions and engaging the exterior surfaces of said side portions, a panel adjacent each end of said body structure, each panel having edges conforming to curved interior surfaces of said body structure and a pair of extensions spaced from each other and passing through slots in said body structure to the exterior thereof, means for holding said panels with respect to said body structure, and a table top supported by said body structure.

3. A knock-down piece of furniture comprising a sheet of resilient material bowed to form a body structure with a curved bottom portion, upstanding side portions, a stretcher of sheet material disposed at substantially right angles to and extending between said upstanding side portions and having end edges contacting with interior surfaces of said side portions, means connecting each of said side portions to said stretcher, panels of sheet material lying in planes parallel to the plane of said stretcher, said panels

being located one adjacent each end of said body structure, each panel having edges conforming to and contacting with curved interior surfaces of said body structure and a pair of extensions spaced from each other and passing through slots in said body structure to the exterior thereof, said edges of said panels which contact with the interior surfaces of said body structure extending to a point above the lower terminals of said end edges of said stretcher which contact with the interior surface of said body structure, means for holding said panels with respect to said body structure, and a table top supported by said body structure.

4. A knock-down piece of furniture comprising a sheet of resilient material bowed to form a trough with side portions extending upwardly from a central curved bottom portion, a stretcher extending between said upstanding side portions, means connecting each of said side portions to said stretcher, a pair of panels spaced from each other and providing walls at the ends of said trough extending to a height sufficiently below the upper edges of said side portions to enable access to the interior of said trough from over the upper edges of said panels, each of said panels having edges conforming to and contacting with curved interior surfaces of said trough and a pair of extensions spaced from each other and passing through slots in said trough to the exterior thereof, means for holding said panels with respect to said trough, and a table top supported by the upstanding side portions of said trough.

5. A knock-down piece of furniture comprising a sheet of resilient material bowed to form a body structure with a curved bottom portion and upstanding side portions, a stretcher extending between said upstanding side portions, means connecting each of said side portions to said stretcher, a panel adjacent each end of said body structure, each panel having edges conforming to curved interior surfaces of said body structure and a pair of extensions spaced from each other and passing through slots in said body structure to the exterior thereof, means for holding said panels with respect to said body

structure, a table top supported by said side portions, and a pair of rails attached to the under side of said table top and spaced apart for accommodating between them said side portions.

6. A knock-down piece of furniture comprising a trough-like body structure and two end panels spaced apart and disposed substantially perpendicularly to said body structure and providing legs for said body structure, said panels having edges abutting the inside surface of said body structure, said abutting edges of each of said panels including a curved lower edge intermediate a pair of said legs and end edges extending upwardly from the outer edges of said legs, said body structure comprising a normally flat sheet of resilient material bowed to provide a curvilinear central portion and upstanding side portions for engaging said curved lower edges and said end edges of said panels, respectively, and having holes therein for accommodating said legs, means including studs attached to said panels and slidably fitting within holes in said body structure for maintaining said panels erect and substantially perpendicular with respect to said body structure, and means engaging said upstanding side portions of said sheet of resilient material for holding said upstanding side portions thereof in abutting relation to said edges of said panels against the natural tendency of the bowed material to flex away therefrom.

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