April 1, 1958 R. W. MELDRUM 2,828,805

UTILITY STOOL

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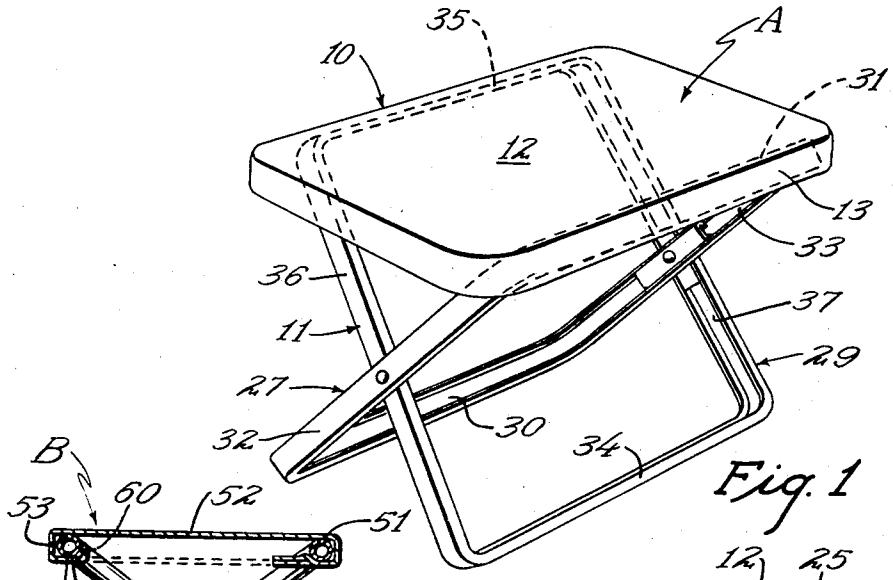


Fig. 1

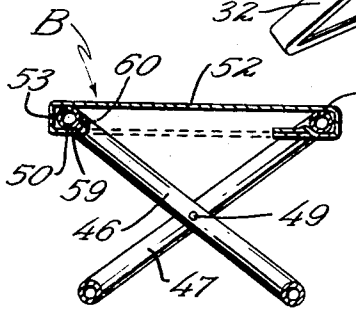


Fig. 4

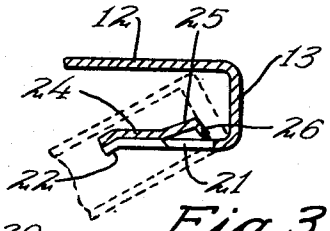


Fig. 3

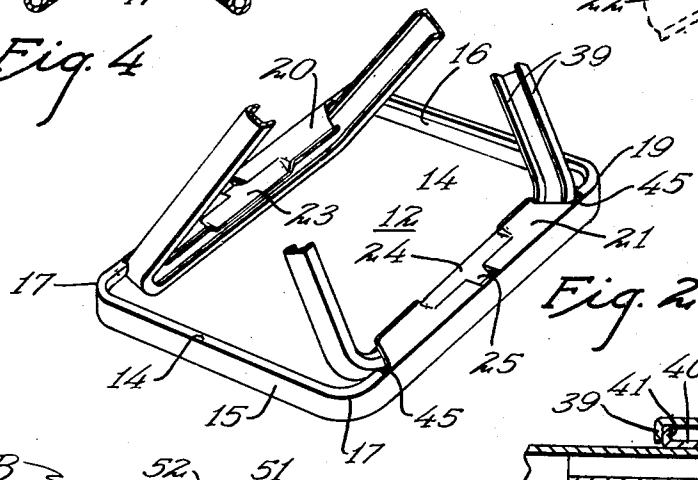


Fig. 2

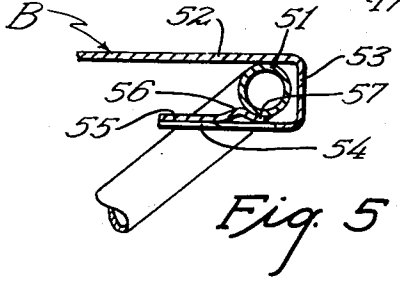


Fig. 5

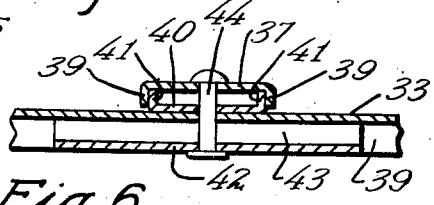


Fig. 6

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UTILITY STOOL

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4 Claims. (Cl. 155—150)

This invention relates to an improvement in utility stool and deals particularly with a small collapsible stool which may be used for a plurality of purposes. The stool may be collapsed into substantially flat form or may be quickly and easily assembled to provide a stool capable of supporting a considerable weight and which may be used for play purposes or as a step stool or table.

Numerous types of stools have been produced which may be collapsed and stored in a small space. The present structure, however, has certain unique features which make it particularly useful for its intended purpose. One of the major advantages of the construction lies in its strength and durability. Thus, while it is useful as a play stool or table for children, it is strong enough to serve as a step stool for adults.

A feature of the invention lies in the fact that the leg unit is made of two similar rectangular frames of light weight channel iron which possesses very substantial strength while being light in weight. The two frames are pivotally connected together intermediate two parallel sides of each frame member so that the leg units may be folded together when not in use.

A feature of the present invention lies in the provision of a stool top which comprises a flat panel having a marginal flange extending entirely about the edge thereof. This flange is provided with an inturned marginal flange extending parallel to the top panel. Opposed portions of these inturned flanges are extended to accommodate an edge of a corresponding leg frame. As the two frames are pivotally connected together, weight upon the top of the stool tends to swing the upper ends of the two leg units apart against the peripheral flanges of the top, thereby providing a structure capable of supporting a substantial weight.

An added feature of the present invention lies in the provision of a simple locking device capable of locking each leg frame to the table top structure. This locking arrangement holds the stool from collapsing accidentally when lifted or carried but permits the top to be detached when desired.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

Figure 1 is a perspective view of my utility stool showing the construction thereof;

Figure 2 is a bottom perspective view of the stool top, portions of the leg units being broken away to show the construction thereof;

Figure 3 is a sectional view through a portion of an edge of the stool top showing the locking means thereon;

Figure 4 is a transverse sectional view through a modified form of construction;

Figure 5 is an enlarged sectional view of one side of the stool shown in Figure 4; and

Figure 6 is a sectional view through the pivot joint between the connecting leg frames.

The stool is indicated in general by the letter A. The stool includes in general a stool top portion **10** and a stool leg section **11**. The two parts are detachably connected together in use.

The table top **10** includes a top panel **12** having a peripheral flange **13** extending entirely about the edge of the same. The flange **13** is provided with an inwardly rolled lower edge **14** which extends throughout the length of the ends **15** and **16** of the top panel and around the corners **17** and **19** of the top portion. Between the ends of the rolled flanges **14**, I provide inwardly projecting flanges **20** and **21** which are in opposed relation and are generally parallel with the panel **12**. As is indicated in Figure 3 of the drawings, the flanges **20** and **21** are provided with downwardly curved inner extremities **22**. As the two flanges **20** and **21** are identical in structure, only one such flange **21** is shown in Figure 3.

As is indicated in Figures 2 and 3 of the drawings, an elongated generally rectangular portion of each of the flanges **20** and **21** is pressed from the frame of the flange toward the top panel **12**. These rectangular sections are indicated at **23** and **24** in Figure 2 of the drawings. At the center of each of these rectangular tongue off set areas **23** and **24**, a rectangular tongue **25** is pressed from the flange and is inclined upwardly and outwardly toward the marginal flange **13**, each tongue terminating in a downwardly and outwardly projecting extremity **26**. This tongue is formed by separating the side edges and outer end of the tongue from the flange from which it is pressed, the tongue remaining connected to the off set portion of the flange along its inner edge. The general shape of the tongue is best shown in Figure 3 of the drawings.

The bottom or leg unit **11** includes a pair of generally rectangular leg frames, the frames being indicated in general by the numerals **27** and **29**. Each of the rectangular frames is identical in form and includes a rectangular structure of channel iron formed with the parallel edges of the channel directed inwardly. The leg frame **27** includes a bottom member **30** and a top member **31** which are connected by parallel frame side members **32** and **33**. Similarly, the leg frame **29** includes parallel bottom and top members **34** and **35** connected by parallel end members **36** and **37**. All of the members described are provided with marginal inturned flanges such as **39** along opposite edges thereof to reinforce the structure.

The ends **32** and **33** of the leg frame **27** and the ends **36** and **37** of the leg frame **29** are provided with central reinforcements designed to strengthen the pivotal joint between these leg frames. One such pivotal joint is shown in Figure 6 of the drawings and two such reinforcing members are shown in Figure 1. The leg frames as viewed in Figure 6 are in right angle relation so that the section extends longitudinally through one such reinforcement and transversely through the other.

As shown in Figure 6, the frame side **37** is provided with a channel-shaped insert **40** which has parallel sides **41** which are sandwiched between the parallel side flanges **39** of the member **37**. This insert is spot welded or otherwise secured in place, although no fastening other than the rivet is absolutely essential. The frame member **33** is provided with a similar channel-shaped insert **42** which also has parallel sides **43** positioned between the flanges **39** of the member **33**. A rivet or pivot bolt **44** extends through the two leg frames at this point to pivotally connect these two frames.

When the table is assembled, the upper members **31** and **35** of the two leg units are forced between the corresponding inturned flange **20** or **21** and the top panel

12. One such member is usually first inserted while the upper end of the leg frame is generally parallel to the top and the leg frame is then pivoted so that an edge of the top member of the frame extends between the tongue 25 and the flange 13. The opposite top member of the other leg unit is then placed against the under surface of the top panel and the two leg frames are pivoted apart, flexing the tongue 25 downwardly until the cross member is between the tongue and the frame side. The resilient tongues hold the leg unit to the table top until it is desired to collapse the table. This may be done by a process reversed to the process previously described.

It will be seen that downward weight upon the table top tends to spread the upper cross members of the leg frames apart. This causes these members to press against the marginal flange 13 which is possessed of considerable strength as it is continuous about the periphery of the table top. It will also be noted that notches 45 are provided between the ends of the rolled flanges 14 and the ends of the inturned flanges 20 and 21. These notches are of proper width to accommodate the leg frames, thus preventing longitudinal movement of the top cross members with respect to the table top.

In Figures 4 and 5 of the drawings I disclose a modified structure which is indicated in general by the letter B. This arrangement is virtually identical to the structure previously described with the exception of the fact that the leg frames are cylindrical or circular in cross section. The two leg frames 46 and 47 are generally rectangular in form and the ends of these frames are pivotally connected at 49. Both of the cross members 50 and 51 of the leg frames 46 and 47 may be detachably connected in the manner illustrated in Figure 5 of the drawings if preferred. In this arrangement the table top panel 52 is provided with a peripheral marginal flange 53 having inturned flanges 54 projecting inwardly from opposite sides of the top in a manner identical to that previously described. A rectangular area 55 of each flange 54 is off set upwardly from the plane of the flange and a central resilient tongue 56 is struck from the body of the flange adjoining the off set area 55. This tongue inclines upwardly and outwardly toward the adjoining flange 53, terminating in a downwardly and outwardly turned extremity 57. The cross member 51 is releasably held in place by this tongue 56.

Figure 4 shows a slightly different arrangement wherein one inturned flange such as 59 terminates in an upwardly bent extremity 60 which combines with the flange 59, the flange 53, and the table top 52 to form a bearing for the cross member 50. In this arrangement one leg frame remains pivotally attached to the table top.

In accordance with the patent statutes, I have described the principles of construction and operation of my utility stool and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A stool including a top having a peripheral flange extending downwardly therefrom, a pair of inturned flanges on opposite sides of said peripheral flange and extending substantially parallel to said stool top, a pair of rectangular crossed leg frames, aligned pivots connecting said frames at the points of intersections thereof, said inturned flanges having off set portions near the free edge thereof off set toward the frame of the stool top, and tongues struck from said inturned flanges and extending outwardly from said off set portions, said tongues extending upwardly and outwardly from the outer edges of said off set portions and terminating in outwardly and downwardly projecting ends.

2. A stool including a top having a peripheral flange extending downwardly therefrom, a pair of inturned flanges on opposite sides of said peripheral flange and extending substantially parallel to said stool top, a pair of rectangular crossed leg frames, aligned pivots connecting said frames at the points of intersection thereof, the uppermost sides of said two rectangular leg frames engaging between said inturned flanges and said stool top, and spring fingers struck from said inturned flanges and connected thereto near the inner edges thereof, said fingers extending outwardly toward the adjacent portions of the peripheral flange and projecting above the level of the inturned flanges from which they are struck and engaging the uppermost sides of the leg frames, the inner edges of said inturned flanges being continuous.

3. The structure of claim 2 and in which the fingers terminate in downwardly and outwardly turned ends.

4. The structure of claim 2 and in which said leg frames are channel shaped in cross section with the bases of the channel outermost and the side flanges of the channel directed inwardly, and including means within said channels at the points of intersection of said frames extending substantially flush with the side flanges of the channels through which said aligned pivots extend.

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