June 3, 1952 W. C. ELLIS 2,598,983

COLLAPSIBLE STAND

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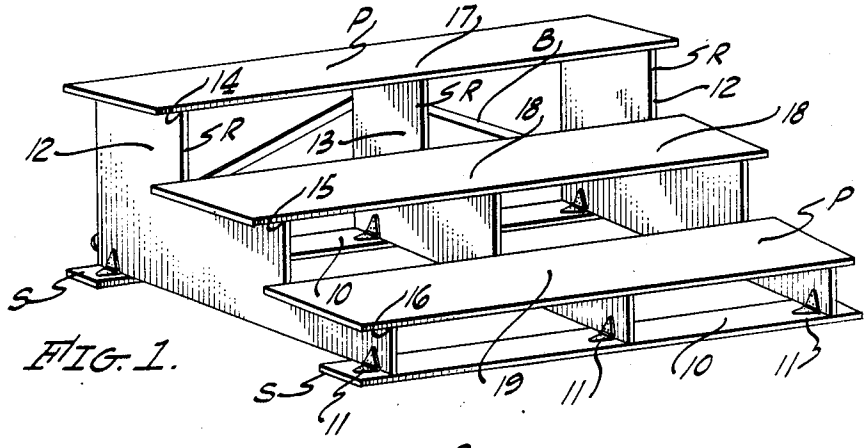


FIG. 1.

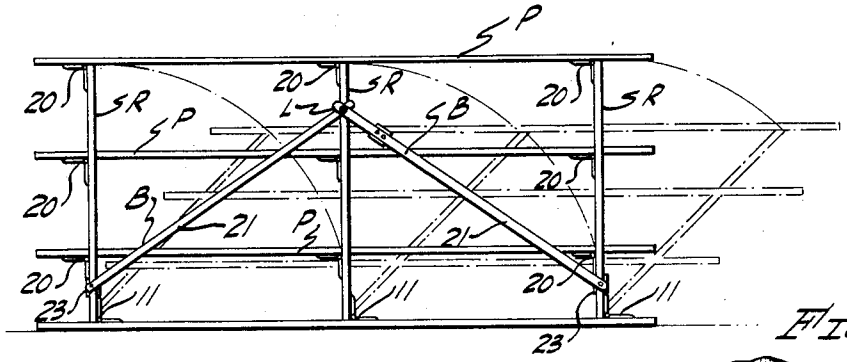


FIG. 2.

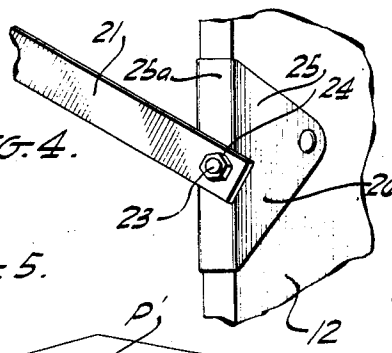


FIG. 4.

FIG. 5.

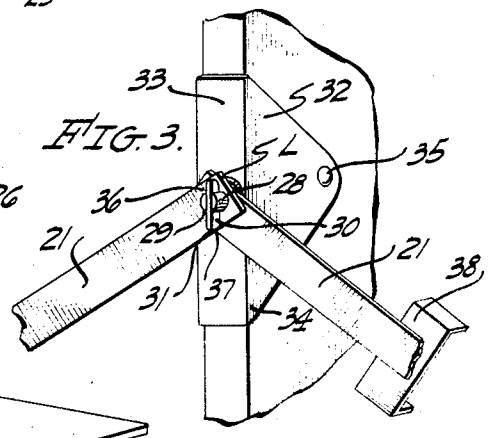
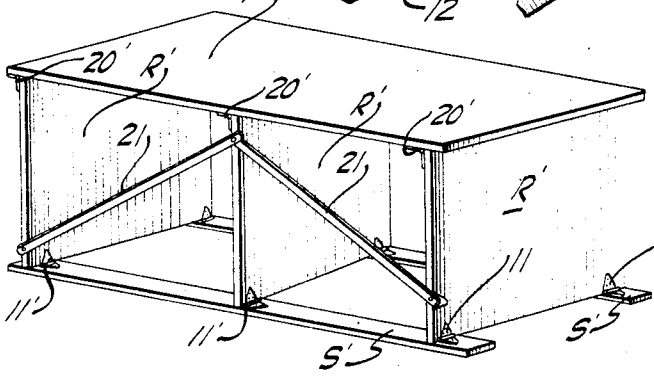


FIG. 3.



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COLLAPSIBLE STAND

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5 Claims. (Cl. 20—1.126)

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My invention relates to the field of supporting structures, and more particularly to a portable collapsible stand that is adapted to support a number of performers, such as choir members or school children when used on a stage, or which can be used as an impromptu stage by itself, either indoors or outdoors.

Although a number of collapsible stands have been devised and marketed in the past, the majority of these devices have the disadvantages that they are of a complicated structure, not easy to erect and collapse, are bulky and cumbersome in appearance, and of such a construction that they might be inadvertently collapsed when in the loaded condition. The purpose of my invention is to furnish a collapsible stand of simplified construction that eliminates the above-named disadvantages which are common to the previously available stands.

A major object of my invention is to provide a collapsible stand having such a simplified structure that it may be erected to a supporting position or placed in the collapsible position by a school child, is attractive in appearance, occupies a minimum of space when in the collapsed position, requires little or no maintenance attention, and due to the locking mechanism used on the device, the possibility of the stand being inadvertently collapsed when in the loaded condition is eliminated.

Another object of my invention is to supply a stand that can be fabricated from inexpensive standard, commercially available material, requires no special machinery or large capital outlay to produce the device commercially, can be fabricated by personnel having but an elementary knowledge of woodworking, and due to this relatively low cost of production can be sold in the medium priced merchandising field to schools, colleges, lodges, and commercial establishments requiring such a device.

These and other objects and advantages of my invention will become apparent from the following description of a preferred form and an alternate form thereof, and from the drawing illustrating those forms in which:

Fig. 1 is a perspective view of my collapsible stand in the erect position;

Fig. 2 is a rear elevational view of the device in the erect position, with the phantom lines showing the path of movement of the risers and platforms as the device is placed in the collapsed position;

Fig. 3 is a perspective view of the locking mechanism used in maintaining the device in an erect position;

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Fig. 4 is a fragmentary perspective view showing the manner in which one of the supporting braces is pivotally supported from a riser; and

Fig. 5 is a perspective view of an alternate form of my collapsible stand.

Referring now to Figs. 1 and 2 for the general arrangement of my invention, it will be seen that two laterally spaced, parallel skids S have a number of risers R hinged thereto, with the risers supporting a number of platforms P at various elevations. Two elongated braces B are each pivotally mounted on a riser R, with the bracer being maintained in a stand supporting position by a locking mechanism L.

Each of the skids S as may best be seen in Fig. 1 is fabricated from an elongated member 10 of rectangular cross-section, preferably of wood, and being provided at longitudinally spaced intervals with a strap hinge 11 of conventional design.

One of the portions of each of the hinges 11 is screwed or otherwise affixed to the upper surface of the member 10, with the other movable portion of the hinge 11 being likewise secured to the lower end of the risers R which is transversely positioned with relation to the skids S. The risers R are identical in design, with two risers 12 being positioned on the end portion of the skids, and a riser 13 positioned intermediately therebetween.

The risers are preferably fabricated from plywood or a similar material, with each of the risers being formed with a series of steps 14, 15 and 16 on the upper edge thereof. Extending across the risers R and parallel with the skids S are the platforms P, with each of the platforms being an elongated rectangular member 17, 18, and 19, which rest on the steps 14, 15, and 16 respectively. A number of hinges 20 are provided, with each of the hinges having one of the movable portions thereof connected to one of the risers R, and the other movable portion thereof connected to one of the platforms 17, 18, or 19 as may best be seen in Fig. 2.

In Fig. 2 it will be noted that the hinges 11 are positioned on one side of the risers R, with the hinges 20 being disposed on the opposite side thereof. It will also be noted that by use of the hinges 11 my stand can be collapsed from the upright position shown in Fig. 2 to a position in which the platforms P are situated adjacent to the skids S and substantially parallel thereto. The position of the platforms P and risers R in

passing from the erect position to the collapsed position is shown by phantom line in Fig. 2.

To maintain the platforms P in a stable position as shown in Figs. 1 and 2, the braces B are positioned as shown in Fig. 2, and locked to the riser 13 as will hereinafter be described. Each of the braces B is formed from an elongated member 21, preferably of strap iron, and has an annular bore formed in the upper end portion thereof. A similar bore is formed in the lower end portion of each of the members 21, and is pivotally engaged by a horizontally positioned screw or threaded rod 23 that extends into the rearward face of one of the risers 12. A lock nut 24 engages the outer end of each of the screws 23, and maintains the brace member 21 in a pivotal position thereon. To reinforce and eliminate wear on the rearward face of each of the risers 12, a channel shaped shield 25 having a bore formed therein for the screw 23 to project through is slipped over the rearward portion of one of the risers 12, with the web portion 25a of the shield being situated adjacent to the rearward face of the riser and in contact therewith. Flanges 26 of the shield 25 are preferably triangular in shape and extend forwardly along the sides of the riser 12, with each flange having a bore formed in the forwardly positioned portion thereof through which a rivet 27 extends to engage the riser 13 and a bore formed on the inwardly positioned portion of the screw 23. Thus, each of the braces B is securely pivoted to one of the risers 12.

The locking mechanism L is formed from a horizontally positioned rod 28 that extends forwardly into the riser 13 on the rearward face thereof. The rod 28 is positioned at a considerably higher elevation than the brace supporting screw 23. The rod 28 is formed with a vertically positioned slot 29 in the rearward portion thereof, and a locking member 30 being pivotally supported in the slot by a transversely positioned pin 31 which extends through the rod. To reinforce and to prevent excessive wear on the rearward face of the riser 13, it is provided with a shield 32 that has a web portion 33 in contact with the rearward face of the riser, and flanges 34 that extend forwardly along the sides thereof as may best be seen in Fig. 3. A rivet 35 extends through bores formed in the forward portion of the flanges 34, and engages the riser, as well as a bore formed in the forward portion of the rod 28. Thus the rod is securely mounted on the riser 13, and cannot rotate to displace the slot 29 from its vertical position.

Each of the braces B is pivotally mounted on one of the screws 23, and has sufficient resiliency for the upper end portion to tend to spring outwardly slightly from the risers. To lock my stand in the upright position, the locking member 30 is pivoted until it is parallel with the rod 28, and the bores in the member 21 are slipped over the rod until they are positioned forwardly from the slots, at which time the locking member 30 is rotated to a substantially vertical position and the braces 21 released. The upper portion of the braces 21 tend to spring rearwardly due to the resiliency previously mentioned, but are unable to do so due to contacting the vertically positioned locking member 30. The braces are unable to pivot the member 30 due to a portion 36 of the member projecting downwardly and a similar portion 37 extending upwardly.

The operation of my invention is extremely simple. Should it be desired to collapse my stand from the position shown in Figs. 1 and 2, the locking member 30 is pivoted until it is parallel with the rod 23, and the braces 21 are disengaged therefrom, and pivoted to a position in which they are substantially parallel to the skids S. With the risers R free to pivot the stand may be collapsed by pivoting the risers R to the right as shown by phantom line in Fig. 2, until the platforms P are situated adjacent to the skids S. A channel shaped member 38 is mounted on the upper portion of one of the braces B, and is adapted to slip over and engage the rearwardly positioned skid S and one of the risers R when my stand is in the collapsed position. It will be apparent that when the member 38 is so engaged the component parts of my stand cannot move with relation to one another, and the stand can be easily moved either to or from a suitable storage place.

It will be noted that the risers R can only pivot to the right, and cannot at any time rotate more than 90° to the left, due to the lower edge of each of the risers contacting the upper surface of the skids S.

Upon occasion it is desirable to provide a stand having but a single platform P' as shown in Fig. 5. The construction of the alternate form of my device is much the same as that previously described, and includes two laterally spaced parallel skids S' having rectangular risers R' pivotally mounted thereon by the use of hinges 11' and 20'. Two brace members 21' are pivotally supported from the end risers 12' as described in connection with the preferred form of my device. To provide additional rigidity for the alternate form of my stand, I prefer to provide a set of braces B on both the forward and rearward side thereof. The operation of the alternate form of my stand is identical with the operation of the preferred form thereof, and need not be repeated.

Although the preferred form and alternate form of my stand are capable of achieving the objects and providing the advantages hereinbefore mentioned, it is to be understood that they are merely illustrative of the presently preferred form of my invention, and that I do not mean to limit myself to the details of construction herein shown and described, other than as defined in the appended claims.

I claim:

1. A collapsible stand which includes: a plurality of parallel platforms; a plurality of parallel skids; three laterally spaced risers, with each of said risers having recesses to provide steps formed on the upper portion thereof, and each of said platforms positioned on one of said set of steps; a plurality of hinges pivotally connecting said risers to said skids and platforms, said hinges joined with said platforms being on opposite sides of said risers to said hinges joined with said skids; two elongated braces, with each of said braces being pivotally mounted on the rearward face of one of the outermost of said risers, and each of said braces having a bore formed in the upper portion thereof; a rod mounted on the rearward face of said intermediately positioned riser, and said rod having a vertically extending slot formed therein; and a locking member pivotally mounted in said slot, with said locking member when positioned coaxially with relation to said rod permitting said rod to engage said bores, and said locking member after said braces having been so engaged being rotated to substantially vertical position to maintain said braces in a locked posi-

tion whereby said stand is held in an erect position until it is desired to be collapsed, whereupon said braces are disengaged from said rod and said platforms pivoted to a position adjacent to said skids.

2. A collapsible stand which includes: a plurality of parallel platforms; a plurality of parallel skids; a series of laterally spaced risers with each of said risers having recesses to provide steps formed on the upper portion thereof, and each of said platforms positioned on one of said sets of steps; a plurality of hinges pivotally connecting said risers to said skids and platforms, said hinges joined with said platforms being on opposite sides of said risers to said hinges joined with said skids; an elongated brace pivotally mounted on one of said risers and having a bore formed in the upper portion thereof; a rod mounted on the rearward face of an adjacently positioned riser, and said rod having a vertically extending slot formed therein; and a locking member pivotally mounted in said slot, with said locking member, when positioned coaxially with relation to said rod, permitting said rod to engage said bore, and said locking member after said brace having been so engaged being rotated to substantially vertical position to maintain said brace in a locked position whereby said stand is held in an erect position until it is desired to be collapsed, whereupon said brace is disengaged from said rod and said platforms pivoted to a position adjacent to said skids.

3. A collapsible stand which includes: a plurality of parallel platforms; a plurality of parallel skids; a series of laterally spaced risers with each of said risers having recesses to provide steps formed on the upper portion thereof, and each of said platforms positioned on one of said sets of steps; a plurality of hinges pivotally connecting said risers to said skids and said platforms, said hinges joined with said platforms being on opposite sides of said risers to said hinges joined with said skids; two elongated braces, with each of said braces being pivotally mounted on the rearward face of one of the outermost of said risers; and complemental engaging means mounted on the free end portions of said braces and the rearward face of an intermediate riser, said means being operable to connect said braces to each other and to said intermediate riser to hold said stand in an erect position, and said means including a locking member movable from a position permitting the engagement of said braces to a position locking said braces against separation.

4. A collapsible stand which includes: a plurality of laterally spaced vertical risers having recessed steps on the upper portion thereof; front and back horizontal skids extending normally to said risers and passing therebeneath in a common plane; a plurality of parallel platforms extending

across said riser steps and spaced apart from front to back whereby they may be moved vertically to be in a common plane; a plurality of hinges pivotally connecting said risers to said skids and platforms, said hinges joined with said platforms being on opposite sides of said risers to said hinges joined with said skids, whereby said risers are pivoted for unidirectional downward swinging, and when erected cooperate with said platforms and skids to provide a series of corner-braced box-like frames; two elongated braces, with each of said braces being pivotally mounted on the rearward face of one of the outermost of said risers and being of a length to extend convergently upward and joining at a common central point; and means supported at said common central point engaging said braces and holding said risers against downward swinging and being disengageable from said braces whereby said risers are freed and are foldable downwardly in a single fold to collapse said risers, skids and platforms to be substantially in three mutually parallel planes, and said stand is compactly positioned for storage.

5. A collapsible stand which includes: a plurality of laterally spaced vertical risers having recessed steps on the upper portion thereof; front and back horizontal skids extending normally to said risers and passing therebeneath in a common plane; a plurality of parallel platforms extending across said riser steps and spaced apart from front to back whereby they may be moved vertically to lie in a common plane; a plurality of hinges pivotally connecting said risers to said skids and platforms, said hinges joined with said platforms being on opposite sides of said risers to said hinges joined with said skids, whereby said risers are pivoted for unidirectional downward swinging, and when erected cooperate with said platforms and said skids to provide a series of corner-braced box-like frames; and bracing means pivotally interconnecting said risers and angularly disposed to hold said risers against downward swinging, said means being removably connected at one end thereof, whereby said risers are freed, and are foldable downwardly in a single fold to collapse said risers, skids and platform to lie substantially in three mutually parallel planes, and said stand is compactly positioned for storage.

WALTER C. ELLIS.

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