United States Patent

[11] 3,599,751

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[54] **COLLAPSIBLE SAWHORSE AND TRAY**
4 Claims, 9 Drawing Figs.

[52] **U.S. Cl.** **182/129,** 182/155
[51] **Int. Cl.** **E04g 1/32,** F16m 11/00
[50] **Field of Search** 182/155, 133, 186, 225, 226, 129; 108/132, 130

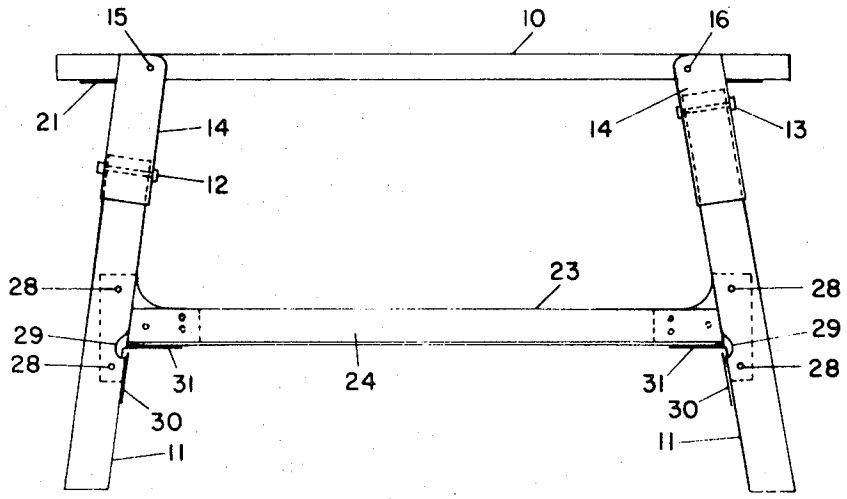
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ABSTRACT: A collapsible sawhorse comprising a beam, leg-supporting brackets having downwardly diverging sides, said sides defining leg receiving channels, legs mounted pivotally in said channels for movement lateral to the beam, the brackets being pivotally mounted on the beam so that each bracket and the legs attached to it are movable in conjunction from a folded position contiguous and parallel to the beam to an extended position at substantially right angles to the beam. The legs of the sawhorse may be adapted to support a tray at about their vertical midpoints.



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SHEET 1 OF 2

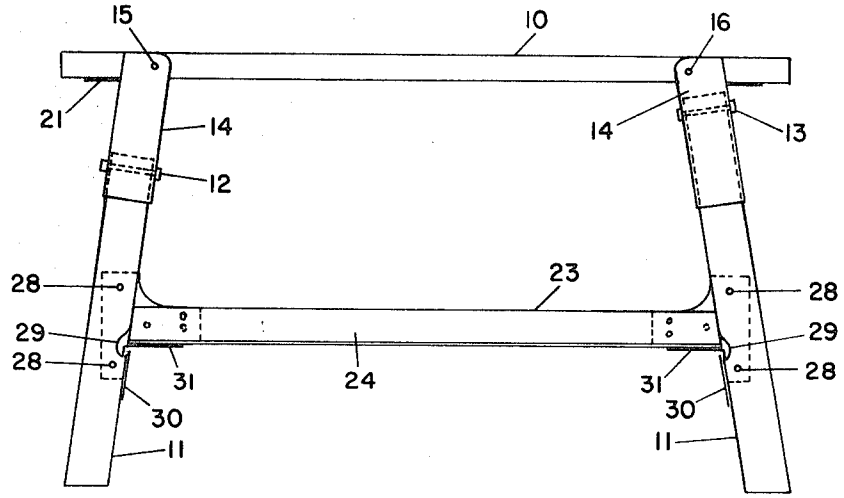


Fig. 1

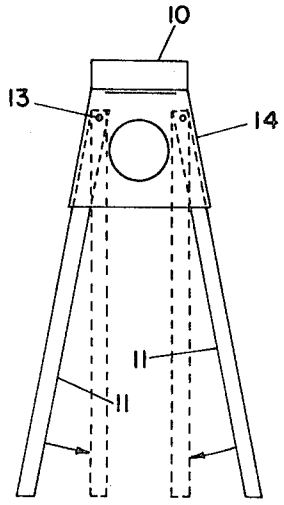


Fig. 2

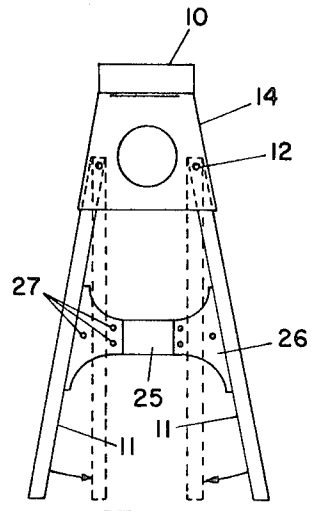


Fig. 3

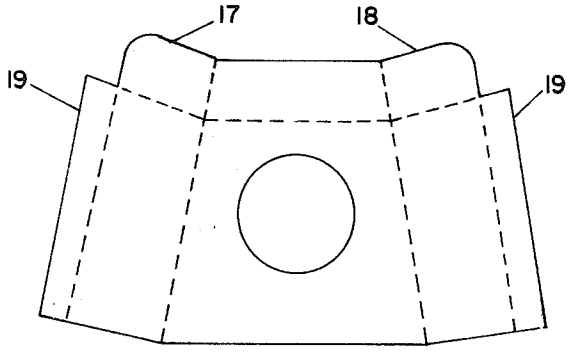


Fig. 4

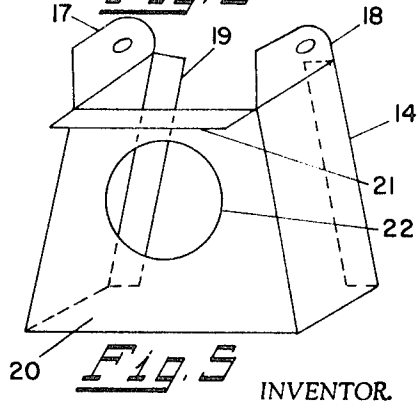


Fig. 5

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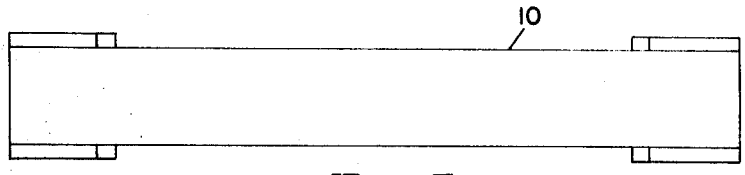


Fig. 6

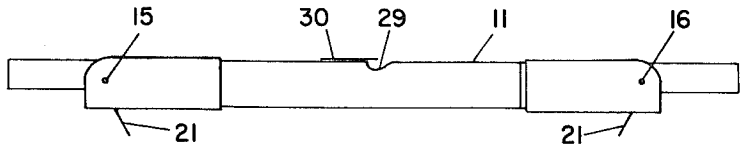


Fig. 7

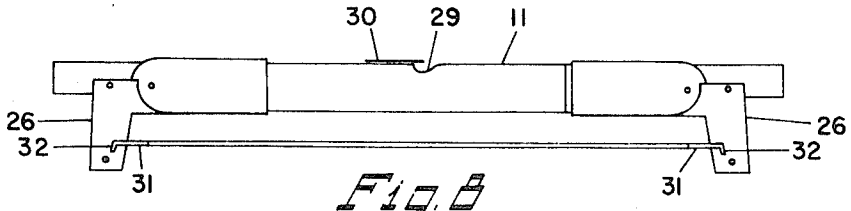


Fig. 8
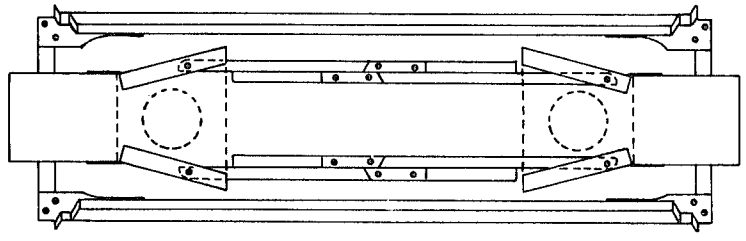


Fig. 9

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COLLAPSIBLE SAWHORSE AND TRAY

This invention relates to sawhorses.

More specifically this invention relates to sawhorses which are collapsible and are adapted to support a tray.

An object of this invention is to provide a sawhorse with means for collapsing the legs into an extremely compact form when not in use and which, when in its upright open position, is very stable, rigid and strong.

Another object of this invention is to provide a shelf or tray which is removably supported on the legs of the sawhorse and which will hold the collapsed sawhorse in stacked relationship.

Other objects and advantages will be apparent from the following description and the accompanying drawings wherein like numerals refer to like parts and wherein:

FIG. **1** is a side elevational view showing the sawhorse in its open position with a tray mounted on the legs.

FIG. **2** is an elevational view of one end of the sawhorse with the tray demounted.

FIG. **3** is an elevational view of the other end of the sawhorse showing the tray in place.

FIG. **4** is a schematic representation of a sheet metal blank from which each bracket of the sawhorse is made, the broken lines showing where the blank is to be cut and bent to form the bracket.

FIG. **5** is a perspective view of a formed bracket, the broken lines showing hidden edges.

FIG. **6** is a plan view of the beam for the sawhorse.

FIG. **7** is a side elevational view of the sawhorse in collapsed position.

FIG. **8** is a side elevational view of the sawhorse in collapsed position stacked in the tray.

FIG. **9** is a plan view of the sawhorse in collapsed position stacked in the tray.

Referring to the drawings in detail, the numeral **10** designates the beam of the sawhorse, which may be wood or other suitable material, supported at each end upon a pair of legs **11**. The legs are pivotally fastened at **12** and **13** by a bolt or other suitable means in brackets **14** which, in turn, are pivotally fastened to beam **10** at **15** and **16** by a bolt or pin or the like. The brackets **14**, are preferably made from sheet metal although other materials, such as Fiberglass-reinforced polymers, would also be suitable. These brackets, as can be readily seen in FIG. **5**, are substantially U-shaped when viewed from above and have wings **17** and **18** through which they are pivotally fastened to the beam. The sides of the brackets diverge downwardly and have inwardly turned flanges **19** which with the web **20**, which connects the downwardly diverging sides, forms U-shaped channels which are each adapted to receive a leg. The flange **21** abuts the beam **10** when the sawhorse is in an open position and helps to provide a greater stability and rigidity to the sawhorse. In addition, when the pivotally mounted brackets and legs are swung to an open position, flange **21** abuts beam **10** and acts as a stop to prevent the bracket and legs from pivoting further, the flat upper surface of the flange providing much more bearing surface than only the edge of web **20** would provide if flange **21** was absent. In the absence of flange **21** the edge of web **20** would, upon repeated use of the sawhorse, bite into the undersurface of beam **10**. The cutout **22** in bracket **14** is merely an expedient to decrease the weight of the bracket. It can be other than circular in shape or, if desired, the web **20** can be left intact with no portion cut out.

Legs **11**, which are conveniently made from wood and are preferably 1×4's, are mounted in the U-shaped channels in bracket **14** so that they can move laterally in relation to beam **10** from a position adjacent to and in contact with the downwardly diverging side of bracket **14** to a position substantially vertical to the beam. The desired movement of the legs is in the direction of the arrows in FIGS. **2** and **3** which depict the position of the legs in solid lines when the sawhorse is in fully open position and in broken lines when the legs have been moved laterally to the beam **10** preparatory to collapsing the sawhorse.

It is to be noted from FIGS. **2** and **3** that the legs at one end of the sawhorse are pivotally fastened in the U-shaped channels of the bracket nearer the top of the bracket and therefore closer to the beam **10** than at the other end. Thus, in FIG. **2** it is apparent that the pivotal fastening **13** is nearer the top of the bracket than the pivotal fastening **12** in FIG. **3**, FIGS. **2** and **3** representing, respectively, each end of a sawhorse. The purpose of such arrangement is to permit the four legs of the sawhorse, when it is in folded position, to nest together in parallel and contiguous relationship with the beam of the sawhorse and with each other. The legs in folded relationship can be seen in FIG. **9**.

If desired the sawhorse of this invention can be adapted to receive a demountable tray **23**. The tray is preferably made of wood and comprises side rails **24** and end rails **25** which are joined by brackets **26** having wing portions dimensioned and angulated to lie flush against the inside facing portions of the downwardly diverging legs as shown in FIG. **3**. The brackets are shown in broken lines in FIG. **1** so that their relationship to the sawhorse and tray can be readily ascertained. The end rails and side rails are fastened to the brackets by screws **27** or other suitable means. The wing portions of the brackets may have holes drilled in them which can be aligned with holes **28** in the legs. Removable fastening means, such as a bolt with a wingnut, can be inserted through the aligned holes to more securely attach the tray to the sawhorse.

In accordance with the preferred embodiment of this invention the sawhorse is adapted to receive a tray by notching the legs as at **29** and fastening a plate **30** to the leg, by screws or other suitable means, with the upper end of the plate extending above the lower end of the notch. The side rails of the tray **23** are dimensioned to lie in the same plane as the diverging legs and to abut the legs. A plate **31** is fastened to the bottom of the side rails and extends beyond the leg-abutting end of the side rail, the extension having a downwardly turned portion **32**. When the tray is mounted on the sawhorse the extension of plate **31** protrudes into notch **29** with the downwardly turned portion **32** extending over and engaging the portion of the leg-mounted plate **30** which extends into notch **29**. The tray is thus securely held by the legs of the sawhorse and serves to strengthen and stabilize the sawhorse and make it more rigid. If desired, additional fastening means may be inserted through holes **28** in alignment with holes in the wing portions of brackets **26** to even further strengthen the sawhorse and tray and increase its rigidity.

The tray is readily removed from the sawhorse and can be used to carry the folded sawhorse as shown in FIGS. **8** and **9** in nesting relationship. In such relationship the sawhorse is collapsed by swinging the legs and brackets inwardly against the underside of the beam into a folded position as shown in FIG. **7** and is then turned upside down before placing it in the tray so that flanges **21** will extend downwardly into the tray and the nested combination of tray and sawhorse will be extremely compact.

It is to be understood that the sawhorse and tray are susceptible to many alterations within the scope of the appended claims. For example, an additional top or plate, such as a piece of lumber, can be fastened to the beam in overlapping relationship on all sides. In use such top or plate which is readily replaceable will be the element receiving damage, saw cuts, gouges, etc., rather than the beam. Also, it may be desirable to support a shelf rather than a tray on the legs of the sawhorse. In such instance the side rails and end rails as well as the brackets fastening them together may be eliminated and the plate **31** may be mounted directly on the bottom of the shelf. Other modifications within the spirit of the invention will be readily apparent to those skilled in the art.

Having thus described the invention what I claim is:

1. A collapsible sawhorse comprising:

a horizontal beam,

substantially U-shaped leg-supporting brackets pivotally secured to said beam at each end thereof, each of said brackets having downwardly diverging sides connected by a web facing outwardly toward the beam end and inwardly turned flanges which in conjunction with the said web delineate a U-shaped channel on each diverging side adapted to receive a leg, the said U-shaped channels in each bracket facing each other,

a leg fastened pivotally in each of said U-shaped channels for movement inwardly lateral to said beam from a position adjacent the diverging side of said bracket, which side forms the bottom of said U-shaped channel, to a position substantially perpendicular to the said beam,

each of the said leg-supporting brackets and the two legs fastened thereto being movable, in conjunction from a folded position contiguous and parallel to the said beam to an extended position at substantially right angles thereto,

the legs in one leg-supporting bracket being pivoted at a point in the said U-shaped channels nearer the top of the bracket and closer to the beam than the legs fastened in the other bracket,

whereby, when the sawhorse is in folded position, all four legs nest together in parallel and contiguous relationship with the said beam and with each other,

2. The collapsible sawhorse of claim 1 adapted to receive a tray or shelf wherein the inside edge of each leg at about the midpoint is characterized by the presence of a notch and a plate fastened to said leg below said notch, the upper end of said plate extending above the lower end of said notch.

3. The collapsible sawhorse of claim 2 in combination with a tray, said tray comprising a shelf and side and end rails, said side and end rails being joined by brackets having wing portions dimensioned and angulated to lie flush against the inside facing portions of the downwardly diverging legs, said side rails of said tray being dimensioned to lie in the same plane as the diverging legs and to abut said legs, said side rails carrying at each end of the bottom thereof a plate extending beyond the end of the side rail where it abuts said legs, said extension having a downwardly turned portion, the said extension protruding into the notch in each leg with said downwardly turned portion engaging the leg-mounted plate extending into said notch.

4. The collapsible sawhorse and tray of claim 3 wherein the wing portion of the tray brackets and the legs are drilled to receive, upon alignment, fastening means for fastening said tray-carrying brackets to said legs.