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KNOCKDOWN SUPPORTING STRUCTURE

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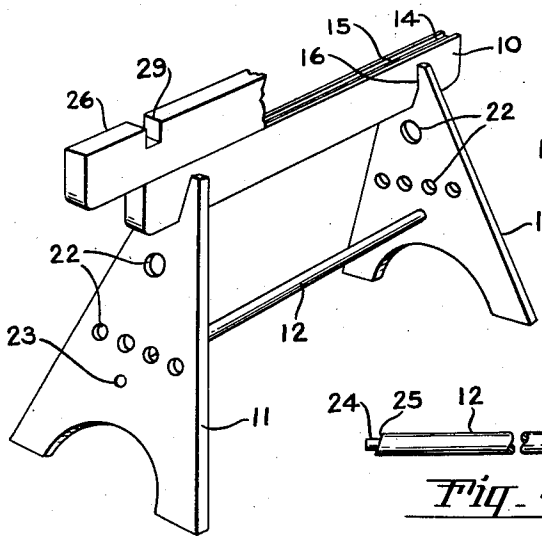


Fig. 1

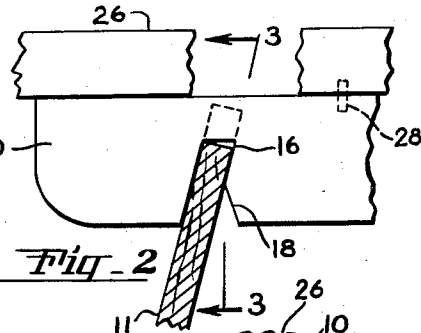


Fig. 2

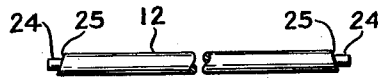


Fig. 4

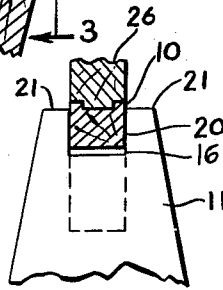


Fig. 3

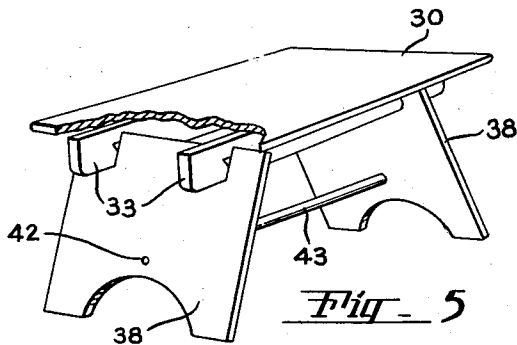


Fig. 5

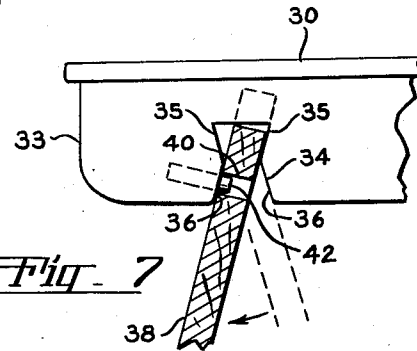


Fig. 7

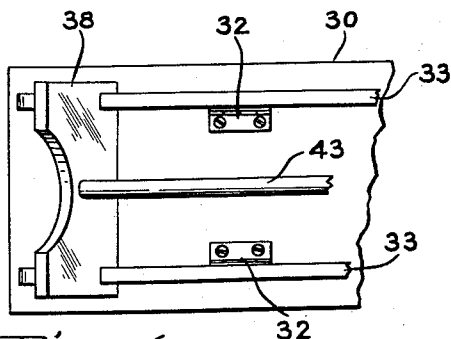


Fig. 6

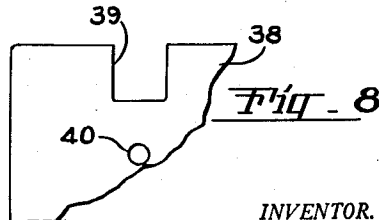


Fig. 8

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KNOCKDOWN SUPPORTING STRUCTURE

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1 Claim. (Cl. 182—181)

This invention relates to support means and, more particularly, to knockdown structure of the horse type for supporting articles or platforms, table tops, scaffolds, and the like.

A principal object of the present invention is to provide support means of improved knockdown structure, facilitating easy assembly and disassembly without tools.

More specific objects are to provide support means which is held in assembled relation without the use of metallic fastening elements; which has a rail and supporting legs having an improved notched interconnection; and which employs spreader means to frictionally bind the legs in notches in the rail.

Another object is to provide means of the type described which has improved means positively preventing displacement of the leg from a notch.

Another object is to provide a collapsible bench or table construction in which the parts may be arranged in a flat and compact bundle for shipment or storage.

An additional object is to provide a support of the type described which is light in weight, sturdy and compact in construction, and economical to manufacture.

The present invention resides in a knockdown structure which may be embodied in a sawhorse for supporting workpieces, table tops, platforms, or the like, or embodied in benches or other articles of furniture, especially for temporary use and use in different places requiring transportation of the articles from time to time. The structure has a cross bar, or rail means, which is notched adjacent each end for receiving a pair of supporting legs, these legs being held in place in the notches by spreader means which force the legs apart and frictionally bind them against the walls of their respective notches. By such structure, the rail means and legs are interconnected without the use of the usual fasteners, providing a structure which can be assembled quickly and easily and which will support heavy loads without collapsing. The invention is illustrated herein as being applied to a sawhorse and a bench, but could as well be applied to other structures. The horse construction is of particular advantage in setting up temporary band platforms and the like for public gatherings and may be furnished in different heights for stepped choral risers, display shelves and the like.

The invention will be better understood and additional objects and advantages will become apparent from the following description taken in connection with the accompanying drawings which illustrate a preferred form of the invention. It is to be understood, however, that the invention may take other forms, and that all such modifications and variations within the scope of the appended claim which will occur to persons skilled in the art are included in the invention.

In the drawing:

Figure 1 is a perspective view of the present invention embodied in a sawhorse;

Figure 2 is a fragmentary side elevational view with

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parts in section, showing in particular the mounting structure between the rail and a supporting leg;

Figure 3 is a sectional view taken on the line 3—3 of Figure 2;

Figure 4 is an elevational view of a spreader bar for forcing the supporting legs apart;

Figure 5 is a perspective view of a bench embodying the principles of the present invention, a portion of the bench top being broken away;

Figure 6 is a fragmentary bottom plan view of the bench of Figure 5;

Figure 7 is a fragmentary elevational view of a modified form of leg connection used with the bench of Figure 5; and

Figure 8 is a fragmentary view of the upper end of a leg used in the connection of Figure 7.

Referring first to Figures 1 through 4, there is illustrated a first embodiment exemplifying the principles of the present invention. This embodiment comprises a sawhorse which, as will be seen, can be used individually for carpenter work or with another horse as a support for a table, platform, scaffold, or the like. The horse comprises, principally, a rail or cross bar 10, a pair of legs 11, and a spreader bar 12. Rail 10 has a longitudinal groove 14 on its top edge and the bottom of this groove has at least two holes 15, one of which is shown in Figure 1, for a purpose to be described.

The lower edge of the rail 10 is notched at 16 adjacent opposite ends and these notches are preferably angularly disposed for holding legs 11 mounted therein in divergent relationship, the notches having cutaway portions 18 to enlarge the mouth thereof for ease in inserting the legs in the notches. The upper ends of the legs 11 also have notches 20 forming projections 21 at the top of the legs, and, in assembled relation, the projections 21 engage opposite sides of the rail 10, as shown in Figure 3, to brace the structure laterally.

Each of the legs 11 has a plurality of apertures 22 for holding tools and an aperture 23 adjacent its lower end for receiving a reduced end portion 24 of the spreader bar 12 in the assembled condition of the horse. Reduced end portions 24 form shoulders 25 with the bar 12, and, in assembled condition, these shoulders abut against the legs to hold the legs apart.

To assemble the horse, the two legs are inserted in the notches 16, and the spreader bar is then mounted between the legs with the projections 24 placed in the apertures 23. The distance between the shoulders 25 of this bar is slightly longer than the horizontal distance between the apertures 23 when the legs are disposed loosely in the notches so that, when the bar is inserted, the legs will be sprung or spread apart sufficiently to tightly bind against the walls of the notches and thus be integrally connected frictionally with the rail 10. For easily inserting the legs in the notches, the notches may be of a slightly greater width than the thickness of the legs, the cutaway portion 18 also facilitating entry of the leg in the notch. This will not make the structure loose or wobbly because the spreader bar exerts a powerful leverage upon the upper leg portions to press them firmly against the opposite walls of the notches 16.

The structure thus far described can readily be used as a sawhorse for holding workpieces or for other uses. The groove 14 is used to hold narrow strips of lumber, such as moldings and the like, while being sawed or the like. When it is desired to use the horse for a support for a table or platform, an adapter bar 26 is used. This bar has dowel pins 28 projecting from its lower edge which fit in the holes 15 of the rail 10 for holding the adapter bar 26 in an upright position. The adapter bar may assume various lengths as desired and may

assume various heights for elevating the table or platform a desired distance above the floor.

The top edge of the adapter bar 26 has transverse notches 29 for receiving rails, not shown, which are disposed across said bars 26 to provide support for a table top or platform between the sawhorses. The bars 26, instead of seating in longitudinal relation on the rail 10, as shown, may be seated thereon in right angular relationship with the pins 28 at their opposite ends engaging holes 15 in different horses. By this method the bars 26 connect a pair of horses together to form a rigid supporting base structure.

In Figure 5 there is shown a bench utilizing the principles of the present invention. This structure comprises a bench top 30 having hingedly mounted to its under surface by hinges 32 a pair of rails 33. These rails have notches 34 in their bottom edges which assume a double dovetail shape, having oppositely flared walls 35 and 36 with pairs of walls 35 and 36 being parallel, best seen in Figure 7. The bench has a pair of legs 38 with a pair of notches 39 in their upper edges which cooperate with the notches 34.

Disposed immediately below each of the notches 39 in the legs 38 is a hole 40 and projecting from the wall 36 nearest the end of the rail 33 is a pin 42 which in the assembled position of the bench engages the hole 40. The legs 38 are inserted while disposed in an inwardly inclined relation, as shown in dotted lines in Figure 7, to clear the pins 42, and, upon being moved fully into position against the top end of the slot, the legs are then pivoted to a position wherein the pin 42 engages the holes 40. The upper ends of the legs will then abut against one of the walls 35 and an oppositely disposed, parallel wall 36.

Each of the legs 38 has an aperture 42 adjacent its lower end engageable by a spreader bar 43 having shoulders similar to the spreader bar shown in Figure 4. The spreader bar 43 binds the legs in the notches to form an integral unit, and displacement of the legs from the notches is prevented by the pins 42. The joint structure shown in Figure 7, including the double flared notch and the pin 42, is not limited in its use with the bench structure of the second embodiment but may as well be used with the sawhorse structure of Figure 1 or other applications in which the invention may be embodied. The fit of the parts may be quite loose for ease of assembly and disassembly, the spreader bar making all the joints tight and rigid after it is inserted.

The bench is easily knocked down by removing the spreader bar 43 and swinging the legs toward each other to disengage the pins 42 from the holes 40, whereupon the legs will be free to slide out of the notches 34. The rails 33 may be rotated on their hinges toward each

other to lie flat against the bottom surface of the top 30 to make a compact knocked down unit package. All parts are flat, without any outstanding projections.

The devices embodying the present invention are economical to manufacture and are sturdy in structure. The devices are readily assembled or disassembled, and, when disassembled, may be arranged in a compact unit for storage or shipment. It is evident that the invention may be embodied in any types of structures other than those illustrated and described.

Having now described my invention and in what manner the same may be used, what I claim as new and desire to protect by Letters Patent is:

A collapsible support comprising a horizontal rail having a transverse notch near each end extending upwardly partially through the rail from the lower edge thereof, each of said notches having opposite upper wall portions diverging upwardly from a narrow mid-portion and opposite lower wall portions diverging downwardly from said narrow mid-portion, a pair of legs in said notches, a spreader bar between lower portions of said legs holding the upper portions thereof in engagement with one of said lower wall portions and the opposite upper wall portion of said notches, and a pin projecting from one of said engaged wall portions of each notch, each leg having an aperture to receive said pin, said legs being insertable in said notches past said pins by swinging the lower ends of the legs toward each other so that the legs enter the notches in spaced relation to said wall portions which are normally engaged thereby.

References Cited in the file of this patent

UNITED STATES PATENTS

304,207	Langlais	Aug. 26, 1884
391,013	Bogardus	Oct. 16, 1888
394,026	Smith	Dec. 4, 1888
861,454	Garrison	July 30, 1907
970,721	Kirkpatrick et al.	Sept. 20, 1910
1,377,425	Milnes, Jr.	May 10, 1921
1,395,166	Tomlinson	Oct. 25, 1921
1,618,803	Boakan	Feb. 22, 1927
1,832,801	Wright	Nov. 17, 1931
2,215,657	Anderson	Sept. 24, 1940
2,369,930	Wagner, Sr.	Feb. 20, 1945
2,486,987	Scarlett	Nov. 1, 1949
2,551,071	Tyng	May 1, 1951
2,560,957	Johnson	July 17, 1951
2,650,147	Sauder	Aug. 25, 1953
2,709,485	Haven	May 31, 1955

FOREIGN PATENTS

2,980	Great Britain	1912
613,759	Great Britain	Dec. 2, 1948