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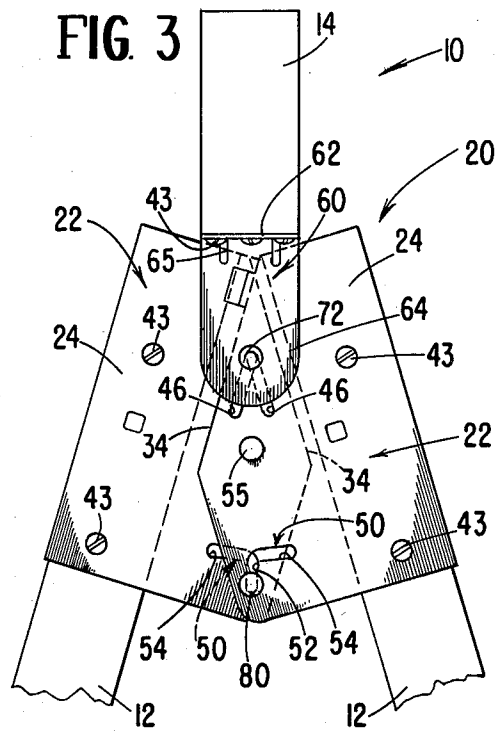
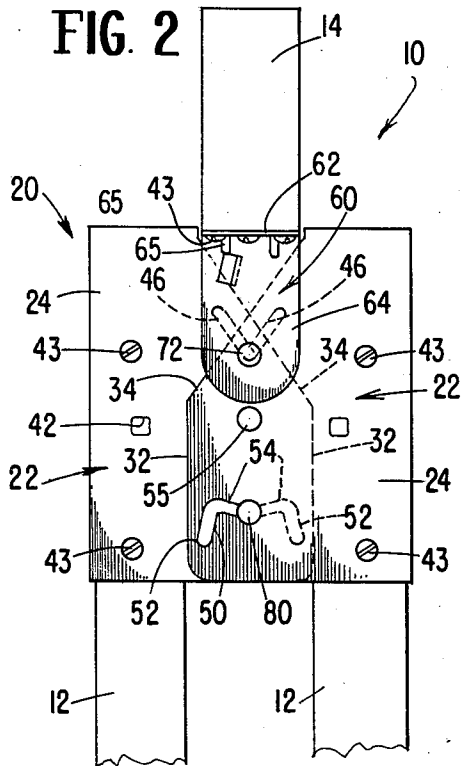
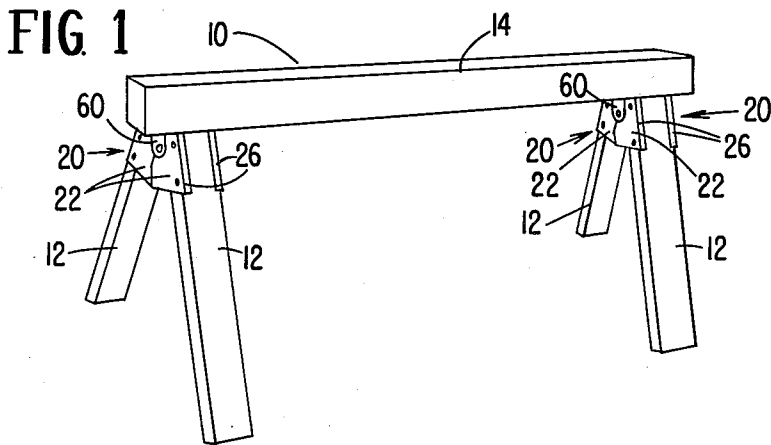
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3,078,956

COLLAPSIBLE SAWHORSE BRACKET ASSEMBLY

Filed April 4, 1962

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

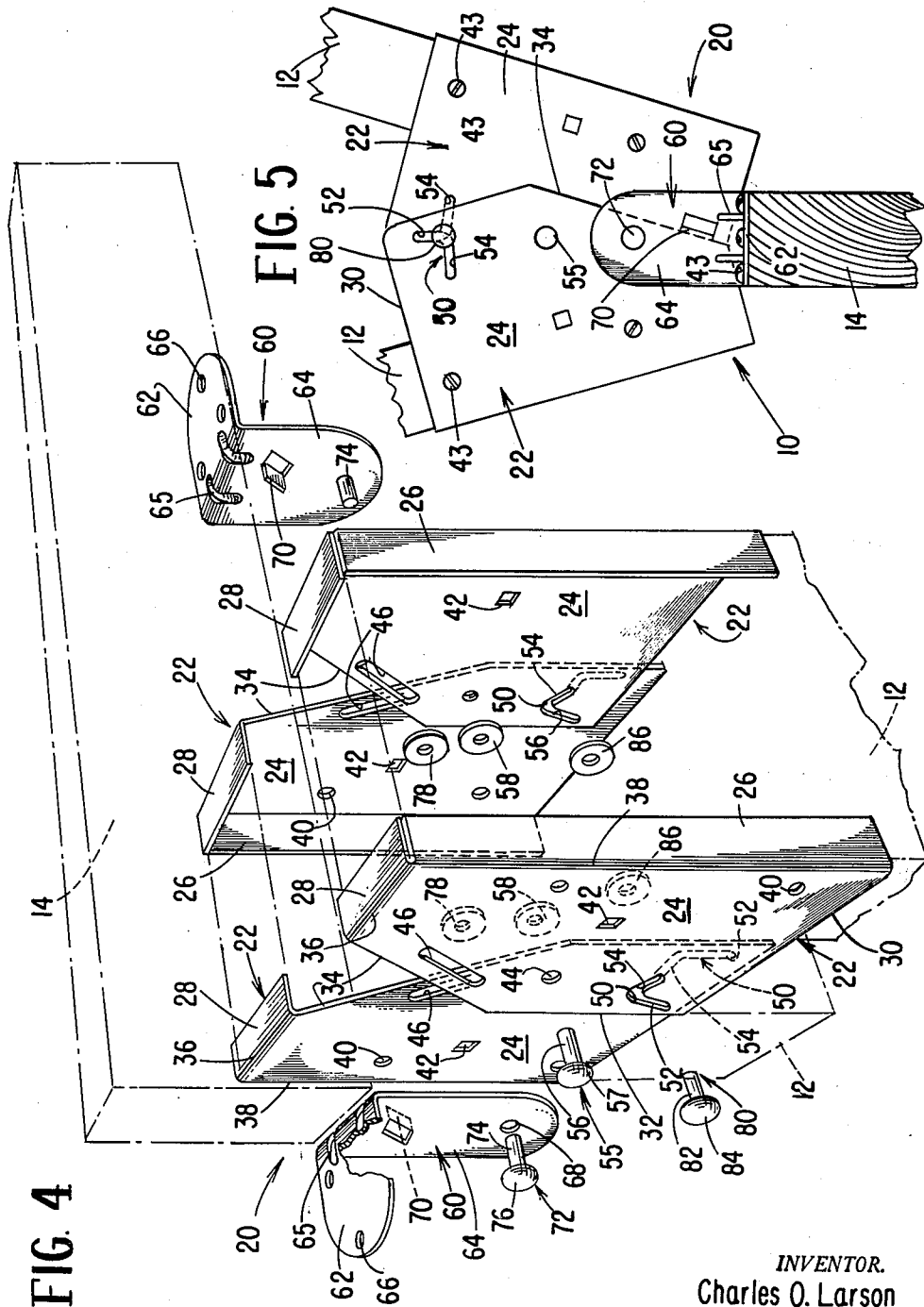


FIG. 4

FIG. 5

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**COLLAPSIBLE SAWHORSE BRACKET ASSEMBLY**  
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 6 Claims. (Cl. 182-225)

This invention relates to sawhorses, barriers, trestles and the like, and particularly to improved bracket assemblies for making collapsible sawhorses and the like.

Although sawhorses are fundamentally used for carpentry work, they also are widely used as barriers, obstacles, temporary fences and the like, and many of these additional uses are temporary in the sense that the sawhorses may be used only for a short period of time, such for example, as a temporary barricade along a construction site, after which the sawhorses are either stored or transported to another place of use. Accordingly, it is desirable that the sawhorses and particularly the bracket assembly thereof be constructed and adapted to permit the legs of the sawhorses to be folded or collapsed between periods of use and during transportation thereof so that the sawhorses will occupy the least possible space. It furthermore is desirable that the sawhorses be foldable or collapsible with a minimum expenditure of energy and time and also that the sawhorses be again readily erected when a demand therefor arises. Upon erection, the sawhorses must be rigid and strong.

Accordingly, it is an important object of the present invention to provide an improved sawhorse bracket assembly which can be quickly assembled to a crosspiece and an associated pair of converging legs to provide a sawhorse structure, and which can be easily and quickly folded or collapsed for transportation and storage thereof.

Another object of the invention is to provide an improved sawhorse bracket assembly of the type set forth wherein the legs of the sawhorse are movable between an operative position wherein the legs support an associated end of the crosspiece, and a folded or collapsed position, wherein the legs are disposed toward each other, the movement of the legs between the operative position and the folded position thereof being accomplished without the use of any tools whatsoever.

Yet another object of the invention is to provide an improved sawhorse bracket assembly of the type set forth wherein lock mechanism is provided that is operated under the action of gravity for holding the legs in the operative position thereof to provide a strong and rigid sawhorse.

A further object of the invention is to provide an improved sawhorse bracket assembly of the type set forth wherein the legs can be moved between a spread operative position and a folded collapsed position easily and quickly, the sawhorse bracket assembly being simple and economically to manufacture and install.

These and other objects and advantages of the invention will be better understood from the following description when taken in conjunction with the accompanying drawings. In the drawings, wherein like reference numerals have been utilized to designate like parts throughout:

FIGURE 1 is a perspective view of a sawhorse constructed utilizing the bracket assemblies of the present invention, two of the bracket assemblies being utilized to secure one set of legs in converging relationship with each other and one end of the crosspiece and two of the bracket assemblies being utilized to secure a second set of legs in converging relationship with each other and the other end of the crosspiece;

FIG. 2 is an enlarged end view of the sawhorse of

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FIG. 1, the parts being shown in the position assumed when the sawhorse legs are in the folded position thereof;

FIG. 3 is an end view similar to FIG. 2 showing the parts of the sawhorse assembly in the operative position thereof, wherein the sawhorse legs diverge outwardly and downwardly from the crosspiece;

FIG. 4 is a further enlarged and exploded view of the parts of two bracket assemblies utilized to secure a pair of sawhorse legs to the sawhorse crosspiece; and

FIG. 5 is a fragmentary view of an end of the sawhorse assembly with the parts in the inverted position in which they are placed more easily to move the legs and associated parts from the operative position to the folded position thereof.

Referring to the drawings, and particularly to FIG. 1, there is shown a sawhorse, generally designated by the numeral 10, which has been assembled utilizing four of the bracket assemblies made in accordance with and embodying the principles of the present invention, the bracket assemblies having been generally designated by the numeral 20. More particularly, the sawhorse 10 includes four legs 12 arranged in pairs at opposite ends of a crosspiece 14, the upper ends of the legs 12 converging toward each other and toward the adjacent end of the crosspiece 14. The bracket assemblies 20 at each end of the sawhorse 10 are identical, and accordingly, only one set of parts will be described in detail, like reference numerals being applied where appropriate to like parts in the other bracket assemblies.

Each of the sawhorse bracket assemblies 20 includes a pair of separate, independent and identical brackets 22, each of the brackets 22 including a main wall 24 which is substantially flat and planar, a side flange 26 formed integral therewith and extending the length of the outer edge thereof, and a top flange 28 formed integral with the main wall 24 and extending the length of the top edge thereof. More specifically, the main plate 24 has a bottom edge 30 and an inner side edge 32 which are disposed substantially perpendicular to each other. The side edge 32 terminates at a point approximately halfway up the main wall 24 and joins an inclined abutment edge 34 which extends upwardly to a top edge 38 at the junction of the main wall 24 and the top flange 28, the top edge 36 being parallel to the bottom edge 30. The remaining edge 38 of the main wall 24 is at the junction thereof with the side flange 26, the side edge 38 being parallel to the side edge 32 and substantially perpendicular to the bottom edge 30 and the top edge 36. There further is formed in the portion of the main plate 34 adjacent to the side flange 26 a plurality of circular holes 40 adapted to receive therethrough fasteners, such as the screws 43, for mounting the bracket 22 upon the upper end of the associated leg 12, the main plate 24 being adapted to lie against one edge of the associated leg 12, the side flange 26 being adapted to engage the outer face of the associated leg 12, and the top flange 28 being adapted to engage the top end of the associated leg 12; in addition, a square opening 42 is provided in the main plate 24 for the reception of a carriage bolt therein if desired.

In order pivotally to interconnect a pair of the side plates 22, as will be explained more fully hereinafter, the main plate 24 is provided with a pivot aperture 44 which is circular in shape and is disposed substantially midway between the bottom edge 30 and the top edge 36 and spaced inwardly a short distance from the inner side edge 32. There also is provided an elongated guide slot 46 in the main plate 24 adjacent to the edge 34 thereof, the longitudinal axis of the guide slot 46 being disposed substantially parallel to the abutment edge 34. There further

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is provided a generally L-shaped slot 50 in the main wall 24 including a first arm 52 and a second arm 54, the first arm 52 being arranged with the longitudinal axis thereof in alignment with the pivot aperture 44 and disposed therebelow toward the bottom edge 30, and the second arm 54 extending from the upper end of the arm 52 with the longitudinal axis thereof substantially perpendicular to the longitudinal axis of the arm 52 and extending toward the side flange 26, see FIG. 3 particularly. The overlapping portions of the arms 52 are arranged substantially vertically when the parts are in the operative position illustrated in FIG. 3.

In order to attach the crosspiece 14 to the brackets 22, each pair of the brackets 22 is provided with an L-shaped strap generally designated by the numeral 60 and including a first flange 62 adapted to be fixedly secured to the underside of the crosspiece 14 and a second flange 64 arranged substantially perpendicular to the first flange 62 and when mounted extending away from the underside of the crosspiece 14 and substantially normal to the longitudinal axis thereof, a pair of reinforcing embossments 65 being provided at the junction of the flanges 62 and 64. More particularly, the first flange 62 is provided with a plurality of holes 66 receiving therethrough suitable fasteners, such as the screws 43, to mount the strap 60 upon the underside of the crosspiece 14. The second flange 64 has a guide aperture 68 therein substantially centrally thereof and adapted to be aligned with the guide slots 46 in the associated brackets 22.

In the bracket assembly 20, the brackets 22 and the strap 60 are arranged with the main plates 24 and the second flange 64 in mutually overlapping relationship and a guide pin generally designated by the numeral 72 is provided including a shank 74 extending through the aligned guide aperture 68 and the guide slots 46, and an enlarged head 76 engaging the outer surface of the strap flange 64. The other end of the shank 74 carries a washer 78 held thereon by peening over the outer end of the shank 74, whereby the main walls 24 and the flange 64 are held in assembled relationship between the head 76 and the washer 78. The guide pin 72 moves along the guide slots 46 as the parts are moved between the folded position and the operative position thereof, the guide pin 72 being in the lower ends of the guide slots 46 when the parts are in the folded position thereof illustrated in the guide pin 72 being in the upper ends of the guide slots 46 when the parts are in the operative position thereof illustrated in FIG. 3.

The brackets 22 are further pivotally interconnected by means of a pivot pin 55 including a shank 56 extending through the aligned pivot apertures 44 in the overlapping portions of the main walls 24, and including an enlarged head 57 engaging the outer surface of the adjacent main wall 24. The other end of the shank 56 carries a washer 58 held thereon by peening over the outer end of the shank 56, whereby the main walls 24 are held in assembled pivotal relationship between the head 57 and the washer 58, this construction serving pivotally to mount the legs 12 with the respect to each other and upon the associated end of the crosspiece 14 through the strap 60.

There also is provided a lock pin which extends through the L-shaped slots 50 in the brackets 22, the lock pin being generally designated by the numeral 80 and including a shank 82 extending through aligned portions of the slots 50 and an enlarged head 84 engaging the outer surface of the adjacent main wall 24, the other end of the shank 82 carrying thereon a washer 86 bearing against the outer surface of the main wall 24 of the innermost bracket 22 and held thereagainst by peening over the outer end of the shank 82. The pivot pin 80 is free to move within the slots 50 between a non-locking or folded position illustrated in FIG. 2, and a locking or extended position illustrated in FIG. 3, the non-locking position of FIG. 2 corresponding to a condition wherein the legs

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12 of the sawhorse 10 are folded toward each other, and the locking position of FIG. 3 corresponding to a condition wherein the legs 12 diverge outwardly and downwardly from the crosspiece 14.

In mounting the bracket assembly 20 upon the legs 12 and the crosspiece 14, the bracket assembly 20 may have the parts thereof pre-assembled before attachment of the brackets 22 to the legs 12 and before attachment of the strap 60 to the crosspiece 14, or alternatively, the brackets 22 may be assembled on the associated legs 12 and the strap 60 mounted on the crosspiece 14 after which the brackets 22 and the strap 60 are interconnected by the pivot pin 55, the guide pin 72 and the lock pin 80 and their associated parts.

Once the parts are assembled as illustrated in the drawings, the lock pin 80 serves to hold the legs 12 in the outer supporting and operative position thereof, the lock pin 80 being disposed in the lower ends of the aligned slots 50 and particularly the lower ends of the arms 52 thereof. Any effort to move the legs 12 toward each other will be prevented since the edges of the slots 50, and particularly the edges of the arms 52 thereof, will engage the lock pin 80 and prevent such movement of the legs 12, whereby the lock pin 80 serves to hold the parts of the sawhorse assembly 20 in the erected and operative position thereof illustrated in FIG. 3.

When it is desired to fold the legs 12 toward each other to the position illustrated in FIG. 2, this can readily be accomplished by first placing the sawhorse 10 in the inverted position diagrammatically illustrated in FIG. 5; the mere placing of the sawhorse 10 in the position of FIG. 5 will cause the lock pin 80 to move under the urging of gravity along the aligned slots 50, and particularly along the arms 52 thereof, to the aligned portions nearest the pivot pin 55 and in horizontal alignment with the arms 54. The outer ends of the legs 12 can now be moved toward each other whereby to move the pivot pin 80 into the slot arms 54 until the parts reach the position illustrated in FIG. 2. When it is desired again to spread the legs 12 to place the parts in the operative position, it is necessary only to place the sawhorse 10 in the upright position thereof, and to move the outer ends of the legs 12 away from each other, whereby to cause the lock pin 80 to move along the slot arms 54 toward the junction thereof with the slot arms 52; and when the pivot pin 80 arrives in the slot arms 52, the slot arms 52 will be disposed vertically and in alignment with each other, whereby the lock pin 80 can readily fall downwardly under the urging of gravity to the locking position illustrated in FIG. 3.

During the above described movement of the various parts, the brackets 22 are pivoting about the pivot pin 55 and the guide pin 72 moves along the guide slots 46 to provide a movable interconnection between the strap 60 and the brackets 22. More particularly, when the legs 12 are in the folded position thereof illustrated in FIG. 2, the guide pin 72 is in the lower ends of the guide slots 46; and when the legs 12 are in the diverging and operative position thereof illustrated in FIG. 3, the guide pin 72 is in the upper ends of the guide slots 46, the pin 72 moving along the guide slots 46 as the parts are moved between the positions illustrated in FIGS. 2 and 3.

The strap 60 also has an abutment flange 70 thereon struck from the flange 64 and inclined in a manner such that it contacts and abuts the abutment edge 34 of the bracket 22 disposed outwardly toward the flange 64, the flange 70 contacting the edge 34 serving to limit the distance that the brackets 22 and the connected legs 12 may be pivoted outwardly away from each other about the pivot pin 55.

Accordingly, it will be seen that the legs 12 and the various parts of the bracket assembly 20 can be moved between the operative position and the folded position thereof without the use of any tools and quickly and con-

veniently by simply turning the sawhorse 10 upside down and then right side up, or vice versa, as required.

It will be seen that there has been provided an improved collapsible sawhorse bracket assembly which fulfills all of the objects and advantages set forth above. Although what is now considered to be the preferred embodiment of the invention has been shown in the drawings and described for purposes of illustration, it is to be understood that various changes and modifications can be made therein and it is intended to cover by the appended claims all such changes and modifications that fall within the spirit and scope of the invention.

What is claimed is:

1. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof, means interconnecting the crosspiece and said brackets, said brackets being mutually overlapping and having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets having in the main wall thereof an L-shaped slot including first and second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said slots and movable therealong in the aligned portions thereof between a locking position and a non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof.

2. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof means interconnecting the crosspiece and said brackets, said brackets being mutually overlapping and having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets in the main wall thereof having an L-shaped slot disposed on the side of said pivot apertures opposite the crosspiece and each including first and second arms, the first arm of each of the said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and extending therefrom away from the crosspiece and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said slots and movable therealong in the aligned portions thereof between a locking position and a

non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof, said lock pin being movable from said locking position to said non-locking position under the urging of gravity when said assembly is arranged with the legs extending upwardly from the crosspiece and said lock pin being movable from said non-locking position to said locking position under the urging of gravity when the legs diverge outwardly and downwardly from the crosspiece.

3. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof and a side flange formed integral with said main wall and disposed substantially perpendicular thereto and along the outer face of the associated leg at the one end thereof and a top flange formed integral with said main wall and disposed substantially perpendicular thereto and along the top edge of the associated leg at the one end thereof, means interconnecting the crosspiece and said brackets, said brackets being mutually overlapping and having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets having in the main wall thereof an L-shaped slot including first and second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said slots and movable therealong in the aligned portions thereof between a locking position and a non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof.

4. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof, an L-shaped strap including a first flange adapted to be fixedly secured to the underside of the crosspiece and a second flange perpendicular to said first flange and extending away from the underside of the crosspiece and connected to said brackets for interconnecting the crosspiece and said brackets, said brackets being mutually overlapping and having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets having in the main wall thereof an L-shaped slot including first and

second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said slots and movable therealong in the aligned portions thereof between a locking position and a non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof.

5. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof, an L-shaped strap including a first flange adapted to be fixedly secured to the underside of the crosspiece and a second flange substantially perpendicular to said first flange and extending away from the underside of the crosspiece and substantially normal to the longitudinal axis thereof, said brackets and said strap being mutually overlapping and said brackets having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets having a guide slot therein extending in a direction toward the crosspiece; said second flange of said strap having a guide aperture therein in alignment with the guide slots in said brackets, a guide pin disposed in said aligned guide slots and guide aperture for interconnecting said brackets and said strap, each of said brackets having in the main wall thereof an L-shaped slot including first and second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said L-shaped slots and movable therealong in the aligned portions thereof between a locking position and a non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting

the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof.

6. A collapsible sawhorse bracket assembly for interconnecting a crosspiece and a pair of legs in converging relationship with each other and to the crosspiece, comprising a pair of separate independent brackets, each bracket including a main wall adapted to be fixedly secured to one edge of the associated leg at one end thereof, an L-shaped strap including a first flange adapted to be fixedly secured to the underside of the crosspiece and a second flange substantially perpendicular to said first flange and extending away from the underside of the crosspiece and substantially normal to the longitudinal axis thereof, said brackets and said strap being mutually overlapping and said brackets having aligned pivot apertures therethrough, a pivot pin disposed in said aligned pivot apertures and pivotally interconnecting said brackets to provide an axis for pivoting the legs between a folded position wherein the other ends thereof are adjacent to each other and an operative position wherein the other ends thereof are spaced apart, each of said brackets having a guide slot therein extending in a direction toward the crosspiece, said second flange of said strap having a guide aperture therein in alignment with the guide slots in said brackets, a guide pin disposed in said aligned guide slots and guide aperture for interconnecting said brackets and said strap, each of said brackets having in the main wall thereof an L-shaped slot including first and second arms, the first arm of each of said L-shaped slots being arranged with the longitudinal axis thereof in alignment with said pivot apertures and in alignment with the first arm of the other L-shaped slot when the legs are in the operative position thereof, the second arm of each of said L-shaped slots being arranged at the end of the associated first arm thereof disposed toward the crosspiece and extending therefrom toward the associated leg, and a lock pin disposed in said L-shaped slots and movable therealong in the aligned portions thereof between a locking position and a non-locking position as the legs move between the operative and folded positions thereof, said lock pin in said locking position being disposed at the ends of the aligned first arms disposed away from the crosspiece with the legs in the operative position thereof and supporting the crosspiece thereupon, said lock pin in said non-locking position being disposed in aligned portions of said second arms with the legs in the folded position thereof, and a stop flange on said strap engaging one of said plates for limiting the pivotal movement between said plates when the legs are moved to the operative position thereof.

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