United States Patent

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[15] 3,700,072

[45] Oct. 24, 1972

[54] **SAWHORSE WITH RETRACTABLE LEGS**

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[22] Filed: **Oct. 23, 1970**

[21] Appl. No.: **83,322**

[52] **U.S. Cl.** **182/155**

[51] **Int. Cl.** **E04g 1/32,** F16m 11/00

[58] **Field of Search** 182/155, 225, 224

[56] **References Cited**

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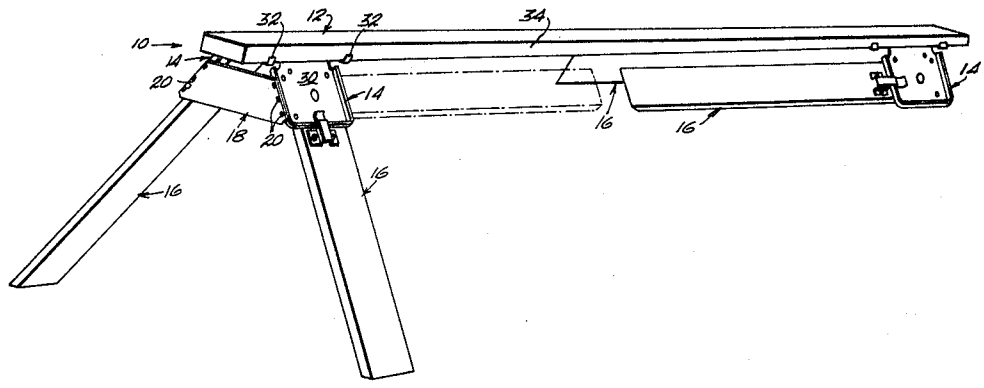
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[57] **ABSTRACT**

A sawhorse structure comprising a transverse work support member and a pair of legs normally diverging downwardly and outwardly from each end portion of the transverse member, the pairs of legs being adapted to be retracted from the diverging positions in a manner so as to reduce the necessary storage or transportation space of an average size saw horse from approximately 10 cubic feet to approximately 1¼ cubic feet. The mechanism for retracting the legs includes a pair of interconnected brackets fixed to each end portion of the transverse member, and pivots connecting one leg to each bracket, a unique application of a pair of yokes associated with each bracket whereby each leg is maintained in either the extended or the retracted position by the pivots and three legs of the pair of yokes, a latch mechanism being employed to lock each leg in either of the retracted or extended positions.

6 Claims, 7 Drawing Figures



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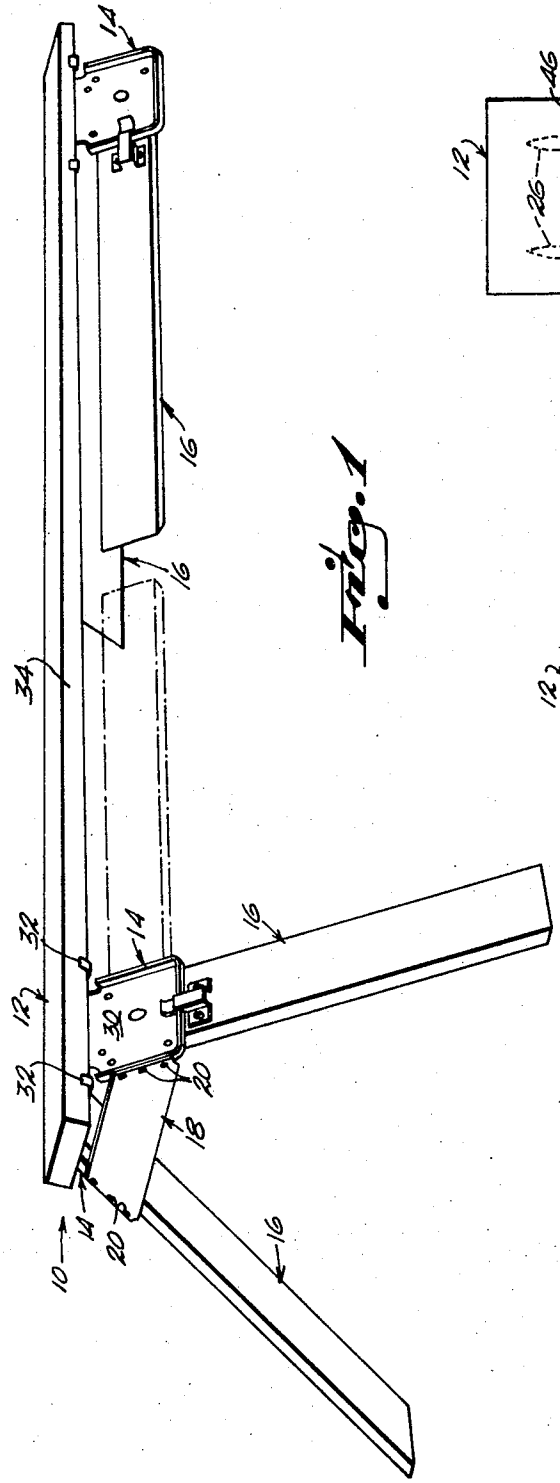


Fig. 1

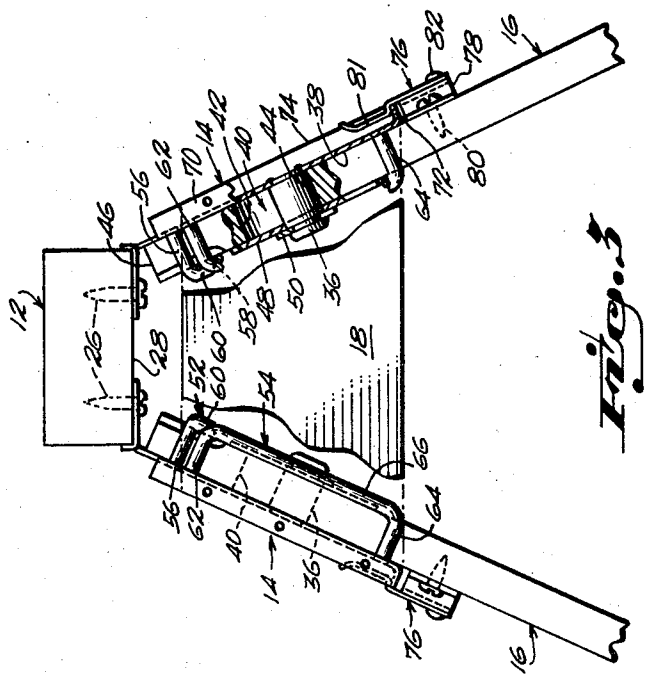


Fig. 3

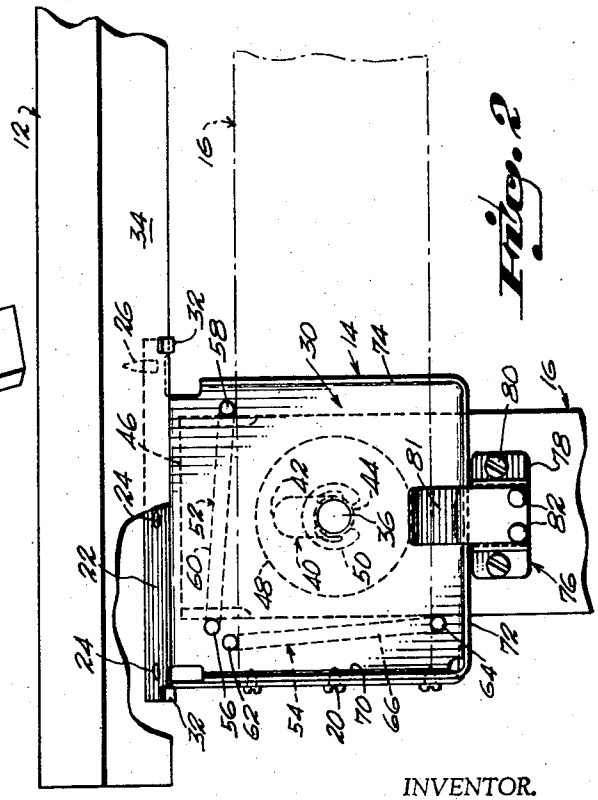


Fig. 2

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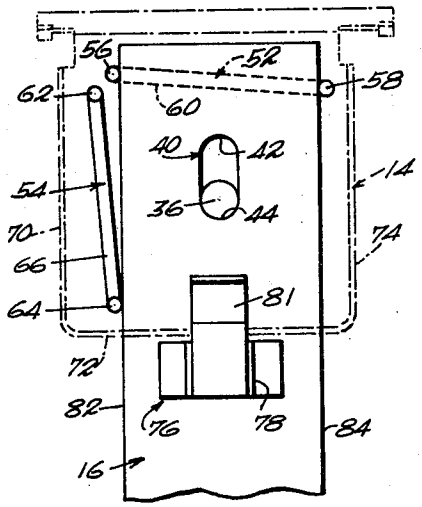


Fig. 4

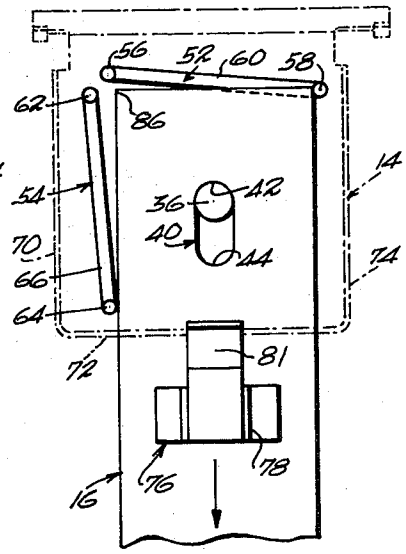


Fig. 5

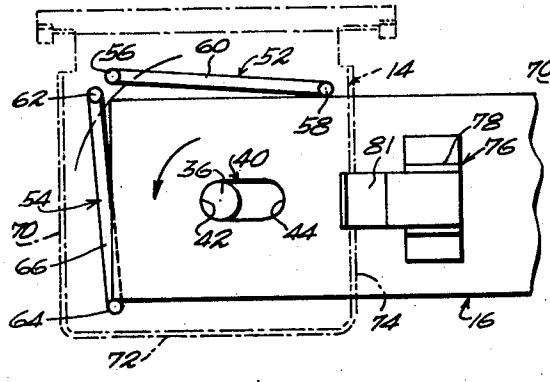


Fig. 6

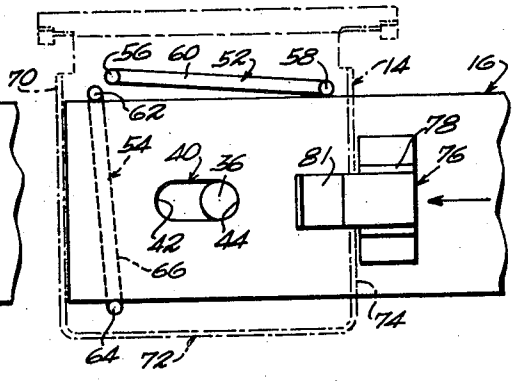


Fig. 7

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SAWHORSE WITH RETRACTABLE LEGS

The present invention pertains to a sawhorse and more particularly to a sawhorse employing a unique bracket, yoke, pivot and latch mechanism whereby the legs of the sawhorse may be positioned in a normal extended in use, position or retracted to a transportation or storage position.

One of the principal objects of my invention is, therefore, to provide a sawhorse which employs the bracket, yoke, pivot and latch mechanism in a unique manner whereby the legs thereof may be positioned in the extended, in use, position and supported in a manner to provide a very rigid structure whereby the work operations being performed on the sawhorse may be accomplished with a great degree of accuracy.

Another principal object of my invention is to provide a structure whereby each leg may be retracted from the extended position with a minimum of effort and this may, in fact, be accomplished with one hand.

Yet another object of my invention is to provide a sawhorse wherein the legs, when retracted, extend inwardly immediately below and in substantial parallelism with the transverse support member.

Another object of the invention is to provide a latch mechanism whereby each leg is automatically securely locked in either the extended or retracted position by simply moving the leg into either of such positions.

Still another object of my invention is to provide a sawhorse structure of the above-described type which is not only rugged and stable in use but is economical to produce.

In the Drawings:

FIG. 1 is a perspective view of a sawhorse embodying the present invention illustrating one pair of legs in the extended position and the other pair of legs in the retracted position;

FIG. 2 is an enlarged elevational view of one of the leg supporting brackets of the present invention with the leg associated therewith being illustrated in an extended position; the leg

FIG. 3 is a fragmentary end view of the sawhorse with parts being broken away to better illustrate the invention;

FIGS. 4, 5, 6 and 7 are a series of schematic views illustrating the movement of one leg of the sawhorse from the extended to the retracted position.

In the drawings in which like reference characters designate like or similar parts throughout the various views, the numeral **10** generally designates the sawhorse of the present invention which includes a transverse work support member **12**, four brackets generally indicated at **14** fixed in opposed pairs adjacent each end of the transverse support member **12** as best illustrated in FIG. **1** and a leg **16** associated with each bracket **14**. Each opposed pair of brackets **14** is preferably interconnected by a face plate **18** fixed to each of the brackets of said pairs by attachment means **20**, FIGS. **1** and **2**.

It should be noted that each of the brackets and associated legs is of identical construction and the following detailed description will be in the singular but will apply to each of said four bracket and leg structures.

Each pair of brackets diverge downwardly and outwardly to any suitable predetermine degree which enables the downward and outward angle of divergence of each pair of legs **16** when the legs are in their extended position as illustrated on the left side of FIG. **1**.

Each bracket **14** includes an inwardly turned flange **22** along its upper edge, said flange being provided with a plurality of apertures **24** through which fastening means such as the screws **26** are passed into the underside **28** of the transverse member **12**. The angular relationship between the flange **22** and the main body portion **30** of the bracket establishes the aforementioned angle of divergence of each pair of legs **16**. A pair of upwardly turned lugs **32—32**, outwardly of each end of the flange **22** is adapted to rest against a vertical face **34** of the transverse member **12**, the principal utility of said lugs **32—32** is to provide for accurate positioning and alignment of all four brackets **14** relative to each other.

As best illustrated in FIGS. **2** and **3**, the bracket **14** is provided with a pivot pin **36**, fixed to the main body portion **30** as by welding, which extends inwardly of the inner face **38** thereof. The pivot pin **36** is adapted to be passed through a vertically disposed elongated slot **40** in the leg **16**, the slot including upper and lower ends **42** and **44**, and being positioned a predetermined distance downwardly from the upper end **46** of the leg **16**. A washer and spring retaining ring mechanism **48** and **50** are utilized to maintain the leg **16** in position on the pivot pin **36** with the outer face of the upper portion of the leg **16** lying against the inner face **38** of the bracket **14**.

With particular reference to FIG. **2** and FIGS. **4** through **7**, it is seen that each bracket **14** is provided with a pair of yokes **52** and **54** extending inwardly from the inner face **38** thereof. The yoke **52** includes an outer and an inner arm **56** and **58** fixed as by welding to the main body portion **30** of the bracket **14** and a span **60** connecting the arms **56** and **58**. The yoke **54** includes an upper and a lower arm **62** and **64** fixed to the bracket **14** in the same manner as legs **56** and **58** of yokes **52** and a span **66** connecting the arms **62** and **64**. With further reference to the aforementioned Figures, it is seen that the span **60** of the yoke **52** lies in a plane angled inwardly and somewhat downwardly from a horizontal plane and the span **66** of the yoke **54** lies in a plane angled downwardly and somewhat inwardly from a vertical plane in a manner so as to provide an angular relationship of somewhat less than 90° between the spans **60** and **66**. The throats provide by both yokes **52** and **54** are sized to substantially conform to the cross sectional size of the leg **16** whereby the upper end portion of the leg may be selectively slid along the inside face **38** of the bracket **14** through the throat of either yokes **52** or **54**.

Each bracket **14** is provided with an outer, outwardly turned flange **70**, and similar lower and inner flanges **72** and **74**. The outer flange **70** is adapted to receive the attaching means **20** for the face plate **18** as previously described and the lower and inner flanges **72** and **74** are adapted to cooperate with a spring latch means **76** fixed to the leg **16** to selectively hold the leg **16** in either an extended or retracted position. The spring latch means **76** comprises a base portion **78**, fixed as by screws **80** to the leg **16**, which is positioned relative to the bracket **14** whereby properly configurated a leaf spring **81**, fixed as by rivets **82** to the base **78**, is adapted to be selectively engaged over the flange **72** to hold the leg **16** in an extended position, or over flange **74** to hold the leg **16** in a retracted position.

FIGS. 4 through 7 are a sequential series of schematic views starting with the leg **16** latched in an extended position in FIG. 4 and ending with the leg **16** latched in a retracted position in FIG. 7. With particular reference to FIG. 4 it is seen that the pivot pin **36** is in engagement with the bottom end **44** of the elongated slot **40** and is being held thusly by engagement of the leaf spring **81** over the lower flange **72** of the bracket **14**. In this position the upper end portion of the leg **16** is extending through the throat provided by yokes **52** and the outer side face **82** of the leg **16** in engagement with arm **56** of the yoke **52** and arm **64** of yoke **54** while the inner side face **84** is in engagement with arm **58** of yoke **52**.

In FIG. **5** the spring leaf **81** of the latch **76** has been manually disengaged from the lower flange **72** and the leg **16** has been slid downwardly until the pivot pin **36** engages the upper end **42** of the slot **40**. It is to be noted that the inner and outer side faces **84** and **82** are still in respective engagement with arms **58** and **64** of yokes **52** and **54**, but face **82** has become disengaged from arm **56** of yoke **52** whereby the upper outer corner **86** of the leg **16** will swing clear of arms **56** and **62** when the leg **16** is pivoted counterclockwisely to a retracted position illustrated in FIG. **6**. Arm **64** of yoke **54** acts as a stop and positions the leg **16** for subsequent sliding engagement of the upper end thereof through the throat provided by yoke **54** as illustrated in FIG. **7**, whereupon the spring leaf **81** of latch **76** automatically snaps over flange **74** of bracket **14** locking the leg **16** in the retracted position with the pivot pin **36** once again in engagement with the bottom end **44** of slot **40**.

When it is desired to re-extend the leg **16**, the procedure just described is reversed and the arm **58** of the yoke **52** acts to position the leg for subsequent sliding movement into the throat provided by the yoke **52**.

It is also noteworthy that legs of varying length may be provided whereby longer or shorter legs may be quickly substituted by simply removing the spring retaining rings **50** and washer **48** sliding the legs to the position illustrated in FIG. **5** and swinging the legs outwardly in a plane perpendicular to the plane of the transverse member **12** until the slot **40** is clear of the pivot pin **36**. By reversing this procedure other legs may then be reinstalled.

While the present invention has been illustrated and described in a preferred form, it is readily apparent that various changes, substitutions and modifications may be made with the scope of the appended claims.

I claim:

1. A sawhorse with retractable legs comprising;

A. a generally horizontally disposed transverse work support member;

B. four brackets fixed in opposed pairs to said work support member with one pair being positioned adjacent each end thereof, each of said pairs diverging outwardly and downwardly from said support member in a common plane and such bracket having,
   1. an outer face,
   2. an inner face,
   3. bottom and inner flanges extending outwardly of said outer face, and
   4. pivot pin means fixed to and extending inwardly from said inner face;

C. four legs for respective connection in opposed pairs of brackets, each of said legs having,
   1. an upper end,
   2. outer and inner faces, and
   3. a longitudinal slot therethrough, positioned a predetermined distance inwardly from said upper end, for the reception of said pivot pin means therethrough, said slot having an upper and a lower end;

D. retainer means fixed to each of said pivot pin means and loosely bearing against said inner face of each of said legs whereby each of said legs is retained in position on its respective pivot pin with the upper portion of said outer face thereof in bearing engagement against said inner face of said bracket, each of said legs being free to be pivoted on said pivot pins and to be slid longitudinally on said pivot pin a predetermined distance as determined by the length of said slot;

E. a first and a second yoke means fixed to each of said brackets and extending inwardly from the inner face thereof, each of said first and second yoke means providing an open throat sized to generally conform to the cross sectional size of said legs, each of said first yokes being positioned to slidably receive the upper end portion of one of said legs through said throat to hold said leg in an extended position with said pivot pin in contact with said lower end of said slot, each of said second yokes being positioned to slidably receive the upper end portion of one of said legs through said throat to hold said leg in a retracted position with said pivot pin in contact with said lower end of said slot, each of said legs being pivotal between said extended and retracted positions when said leg is slid on said pivot pin until said pivot pin is in contact with said upper end of said slot.

2. A saw horse with retractable legs as defined in claim 1 including latch means whereby each of said legs may be automatically, selectively locked in either of said extended or retracted positions.

3. A saw horse with retractable legs as defined in claim 2 in which each of said latch means comprises a body portion fixed to one of said legs and a spring leaf means fixed to said body portion which is adapted to be engaged over said bottom flange when said leg is in an extended position as over said inner flange when said leg is in a retracted position, said spring leaf being readily, manually releasable to permit said sliding and pivotal movement.

4. A sawhorse with retractable legs as defined in claim 1 in which each of said yokes comprises a first and a second arm and a span connecting the inner ends of said first and second arms with the outer ends of said arms being fixed to said bracket, said first and second yokes being positioned in an angular relationship relative to said legs whereby said first arm of said first yoke acts as a stop means to position said leg in the proper extended position when said pivot pin is in contact with said upper end of said slot, and said first arm of said second yoke acts as a stop means to position said leg in a proper retracted position when said pivot pin is in contact with said upper end of said slot, the upper end of said leg passing clear of said second arms of both the first and second yokes when being pivoted between

said extended and retracted positions, and said leg being readily slidable into either of the throats of said first and second yokes when said leg is in contact with their respective first arm stop means.

5. A saw horse with retractable legs as defined in claim 1 in which said retainer means comprises a washer on each of said pivot pin means loosely bearing against said inner face of each of said legs and a spring retaining ring engaged in an annular groove adjacent the inner end of each of said pivot pin means, said spring retaining ring bearing against the inner face of said washer.

6. A sawhorse with retractable legs as defined in claim 1 including a face plate and fastening means interconnecting each of said pair of opposed brackets.

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