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[54] **FOLDABLE WORK PLATFORM**

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Related U.S. Patent Documents

Reissue of:

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[52] **U.S. Cl.** **182/153**; 182/182; 182/227; 248/167; 248/188.6

[58] **Field of Search** 182/153, 154, 181, 182, 182/183, 184, 185, 186, 224, 225, 226, 227; 248/188.6, 167, 436; 269/296

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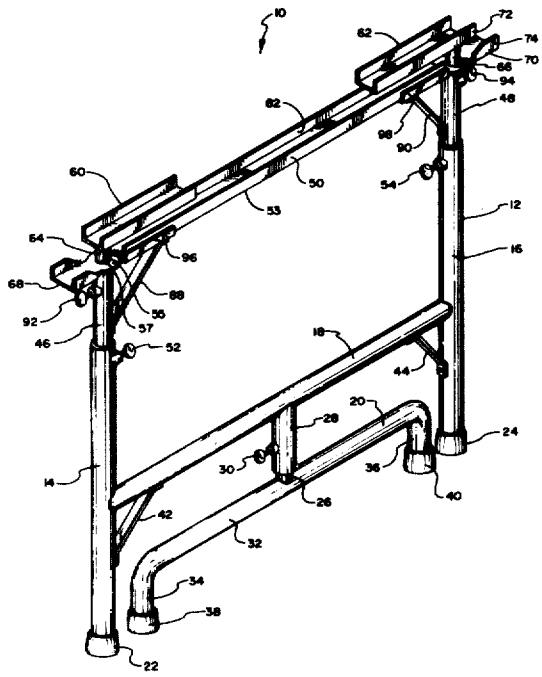
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[57] **ABSTRACT**

An improved foldable work stand and platform having an upper work support surface with wooden inserts therein to protect saws and the like from being damaged by accidental contact with the metal structure of the platform. The foldable work platform also includes improved structure for elevating the working surface and an adjustable stabilizer leg to maintain the work surface generally horizontal on uneven terrain. Lateral extensions of the work surface provide versatility in the work surface configuration and are easily secured in a selected orientation.

6 Claims, 5 Drawing Figures



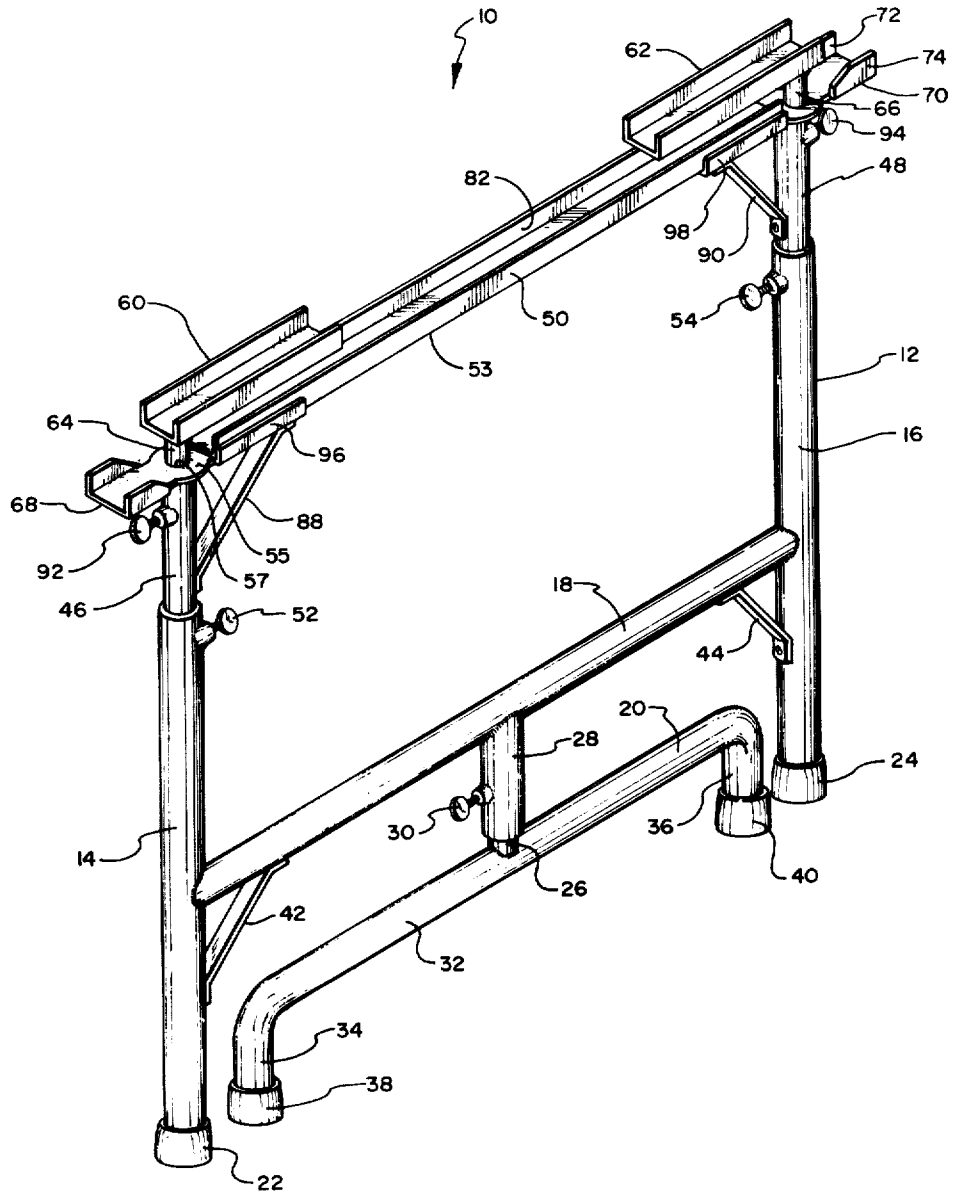

10
72
62
74
70
66
94
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98
90
60
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FIG. 1

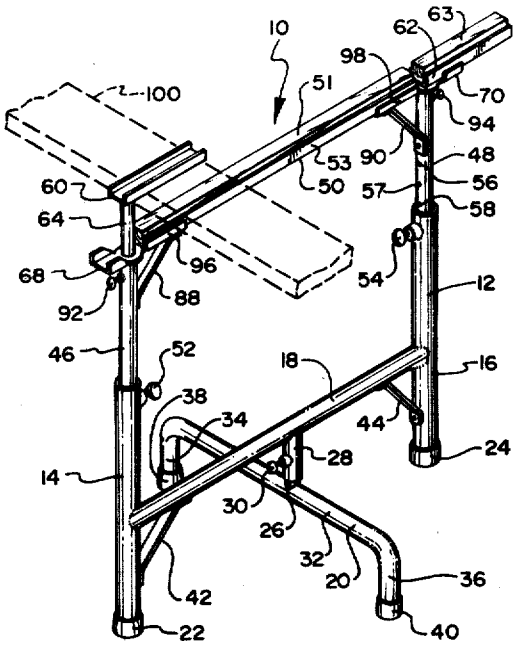


FIG. 2

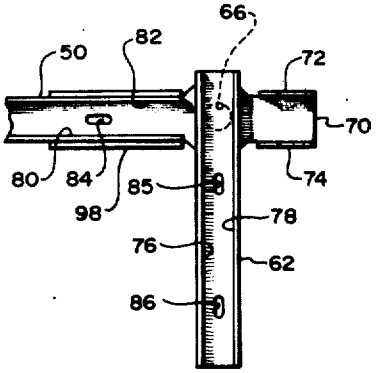


FIG. 4

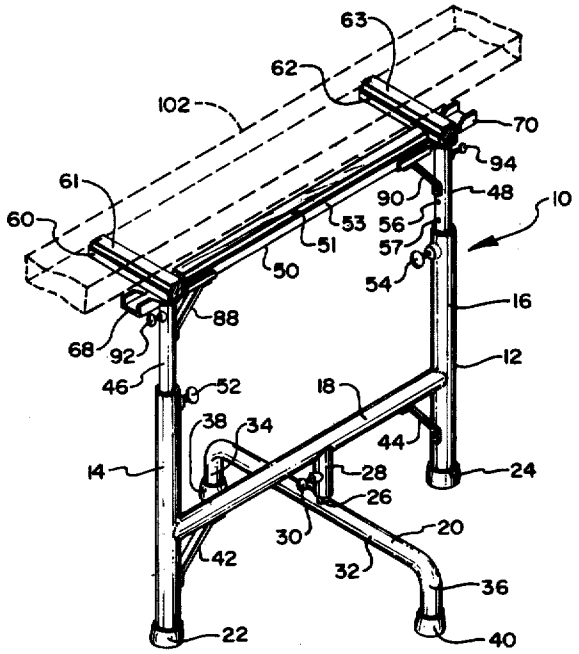


FIG. 3

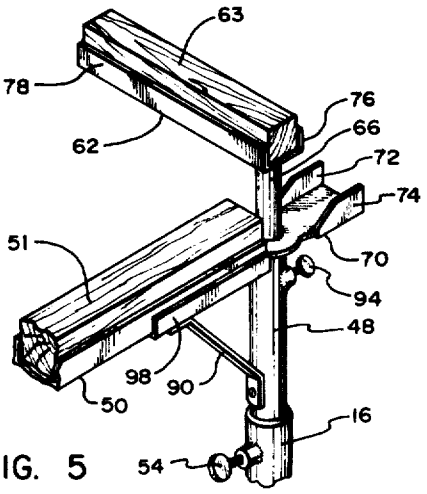


FIG. 5

FOLDABLE WORK PLATFORM

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND

1. Field of the Invention

The present invention relates to foldable work platforms.

2. The Prior Art

Conventional work platforms are commonly referred to as saw horses. Saw horses are commonly rigidly constructed from wood and present a wooden surface upon which boards and the like are placed for cutting and/or fabrication. Often saw horses are constructed on a job site because of their awkward shape and the attendant difficulty with which they are transported.

One of the most persistent problems, however, is the common practice of inadvertently cutting through the saw horse as boards thereon are being cut. When cut through, the saw horse is worthless and another must be constructed thereby incurring significant cost of time and materials.

Foldable work platforms for use as extensible support stands and surfaces for workpieces are known in the art. One prior art work platform is manufactured in West Germany and is sold under the trademark of WAKU and distributed by Cross State Sales, Inc. of Salt Lake City, Utah. The upper surfaces of the prior art work platform are, however, fabricated from metal stock and covered with a thin, rubberized mat surface. Experience has revealed that using a work platform with a metal surface frequently damages saws and other tools and the like when a board is accidentally cut through striking the upper metal surface of the work platform.

In view of the foregoing, it would be an advancement in the art to provide a foldable, extensible work platform which is more easily manipulated, has improved stability, and provides a surface which will not damage saws and the like if the same are accidentally brought into contact with the upper surface thereof. Such an invention is disclosed herein.

BRIEF SUMMARY AND OBJECTS OF THE INVENTION

The present invention relates to an improved metal work platform which is foldable into a generally flat configuration and includes replaceable wooden inserts for the working surfaces thereof. The wooden inserts extend above the adjacent metal parts of the platform to intercept saws or other cutting tools to prevent or at least minimize damage from accidentally striking the upper surfaces of the platform. The wooden inserts and the corresponding receiving areas of the platform are specifically designed to accommodate replacement. Novel interlock structure permits the workpiece to be secured in any one of a variety of work surface configurations.

Accordingly, it is the principal object of this invention to provide improvements in foldable work platforms.

It is another object of this invention to provide a foldable work platform with a replaceable wooden insert for the working surface thereof.

Another object of this invention is to provide improvements in the smooth operation and stability of an extensible, foldable work platform.

These and other objects and features of the present invention will become more fully apparent from the following description and appended claims taken in conjunction with the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective illustration of the work platform of this invention in a first, folded position, the wooden inserts having been removed to reveal underlying structure;

FIG. 2 is a perspective illustration of the work platform of this invention in one operative position, a workpiece illustrated in broken lines being clamped thereon;

FIG. 3 is a perspective illustration of the work platform of this invention in another operative position with a workpiece illustrated thereon in broken lines;

FIG. 4 is a fragmentary plan view of one portion of the work platform with wood inserts removed; and

FIG. 5 is a fragmentary schematic perspective illustration of one portion of the work platform of this invention in transition from one position to another.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention is best understood by reference to the figures wherein like parts are designated with like numerals throughout.

Referring now to the drawing, the work platform is shown generally at **10** and includes a base **12**, a support stand **20** and a scaffold **50**.

Base **12** is generally configurated in the form of the letter H and includes vertical legs **14** and **16** which are formed from hollow metal tubes securely welded to a horizontal diametrally piece **18**. The hollow tubes give the required strength and also give the work platform **10** a lightweight character. Lateral stability for base **12** is provided by a support stand **20** likewise formed of hollow tubular material. Support stand **20** further includes downwardly extending legs **34** and **36**. Legs **34** and **36** terminate in feet **38** and **40**, respectively which are preferably caps of non-skid rubber. Support stand **20** is rotatably and extensibly coupled to cross piece **18** with a hollow sleeve **28** welded or otherwise suitably permanently mounted upon cross piece **18**. Hollow sleeve **28** telescopically receives a diametrically reduced neck **26** of support stand **20**. The neck **26** is permanently joined to the stand **20** intermediate the length hereof and projects vertically upward. A set screw **30** is used to releasably lock the neck **26** in collar **28** and thereby accommodate setting the desired rotational position of support stand **20** with respect to base **12**. It is also observed that the neck **26** is elongated to permit extension thereof out of the collar **28**. Thus, on uneven terrain the stand **20** may be extended into ground engagement so that the stand **20** and one of the legs **14** or **16** will maintain the work platform **10** upright even if the other of the legs **14** or **16** does not engage the ground because of the uneven terrain.

Legs **14** and **16** terminate in a foot **22** and **24**, respectively, each of which is a cap of non-skid rubber. Additional support between the legs **14** and **16** and the cross piece **18** is obtained by diagonal braces **42** and **44**, re-

spectively. The upper end of legs **14** and **16** is open to receive telescoping tubes **46** and **48** forming part of scaffold **50**. The vertical height of the scaffold **50** may be adjusted by telescoping or extending the tubes **46** and **48** from the corresponding legs **14** and **16**. Thumb screws **52** and **54** provide securement for the relative positions of the legs and tubes. Because the work platform may be required to support considerable weight, a positive interlock is desirable. Therefore, each tube **46** and **48** is provided with a plurality of apertures **56–58** into which thumb screws **52** and **54** advance so as to provide positive interlock between the legs **14** and **16** and corresponding tubes **46** and **48**.

Scaffold **50** is constructed of a pair of support brackets **96** and **98** which are channel members opening upwardly. The tubes **46** and **48** are welded or otherwise suitably attached to the brackets **96** and **98**, respectively, intermediate the length thereof. Each bracket **96** and **98** has an intermediate portion **55** from which the upstanding sides **72** and **75** of the channel member have been cut away. A through-bore **57** in the base of each bracket **96** and **98** is aligned with the corresponding tube **46** or **48** for a purpose hereinafter more fully described.

Each bracket **96** and **98** has a corresponding laterally extending support element **68** and **70** which projects beyond the legs **14** and **16** and which is separated from the remainder of the bracket **96** or **98** by intermediate portion **55**. Angle braces **88** and **90** are welded or bolted between the tubes **46** and **48** to give vertical integrity to the brackets **96** and **98**, respectively.

Cross channel **53** traverses the space between brackets **96** and **98** and is welded or otherwise permanently secured thereto. Cross channel **53** is configurated as an upwardly open channel having side walls **80** and **82** and in accordance with the present invention, receives a wooden insert **51** in nesting relationship, said insert **51** having a vertical dimension sufficient to extend above side walls **80** and **82** (see FIG. **3**). It is presently preferred that at least half of the depth of the insert **51** project above the side walls **80** and **82**. The insert **51** is illustrated as a wooden strip which is square in cross section and has a typical dimension of 2 inches (5.08 cm) square. Clearly, any suitable alternative dimensions could be used. The portion of insert **51** which is exposed above the cross channel **53** absorbs the inadvertent cuts and blows of saws or other tools and thus reduces damage to the tools which might otherwise result if the saw should strike a metal surface.

The versatility of the scaffold **50** is dramatically increased with the addition of rotatable arms **60** and **62**. The arm **60** is an upwardly opening channel member having a depending shaft **64** mounted at the bottom thereof near one end. Arm **62** is similarly configurated and has a corresponding shaft **66** mounted adjacent one end thereof. Each of the shafts **64** and **66** has a substantial axial length which projects into the hollow of corresponding tubes **46** and **48**. In the illustrated embodiment, the shafts **62** and **64** are rotatable within the corresponding tubes and, in addition, are telescopically extensible and retractable into and out of the corresponding tubes **46** and **48**. The movability of the arms **62** and **60** permits the arms to be placed in any one of a plurality of desirable positions as illustrated in FIGS. **2–5** and as will be hereinafter more fully described. Once the position of the arms has been determined, the position is fixed by advancing thumb screws **92** and **94** through tubes **46** and **48**, respectively so as to form a friction-securement of the thumb screws against the shafts **64** and **66**.

The lateral dimension of the arms **60** and **62** is substantially the same as the lateral dimension of cross channel **53**. Accordingly, the arms **60** and **62** will not nest within the cross channel **53** even when the wood insert **51** (FIG. **5**) has been removed. However, it is observed that the laterally extending support elements **68** and **70** are slightly larger in width than the lateral dimension of the arms **60** and **62**. Accordingly, as shown at the right side of FIG. **2** each arm will nest securely between the upstanding sides **72** and **74** of the corresponding support element. It is also observed that the open space at the intermediate portion **55** will receive arms **60** or **62** at right angles generally as shown in FIGS. **3** and **4**. The upstanding sides of the brackets **96** and **98** will continuously maintain the arms **60** and **62** in either the laterally projecting position illustrated at the right side of FIG. **2** or the essentially right angle orientation as illustrated in FIGS. **3** and **4**. The thumb screw **92** or **94** will prevent vertical extension of the arm except when desired for movement into a selected position as shown in FIG. **5**.

Both of the arms **60** and **62** have corresponding wood inserts **61** and **63** which have substantially the same cross section as the insert **51** (see FIG. **3**). The length of the wood inserts **61** and **63** is selected to be substantially identical to the length of the arms **60** and **62**.

Each of the inserts **51**, **61** and **63** are replaceable within their corresponding channel elements. Referring particularly to FIG. **4**, it is pointed out that cross channel **53** is provided with a plurality of elongated slots **84** at spaced locations along its entire length, only one slot being illustrated in FIG. **4**. The elongated slots **84** permit wood screws (not shown) to threadedly engage and secure the insert **51** when the insert is nested within the channel **53**. Arm **62**, as shown in FIG. **4**, is also provided with elongated slots **85** and **86** similarly adapted to receive wood screws (not shown) to secure insert **63** between the upper right sides **76** and **78** of the arm **62**. While a specific illustration of the securement of the insert **61** to the arm **60** is not illustrated, it is understood that the insert **61** is similarly secured to the arm **60**.

The advantage of the mentioned securement is that the inserts may be easily removed by simply removing the corresponding screws and lifting the insert from its corresponding channel member. Thus, damaged inserts can be simply and quickly replaced with little waste of material and time.

The mode of operation of the work platform **10** will now be described. For transport and storage, the platform **10** is preferably folded as illustrated in FIG. **1**. In this folded configuration, the platform is essentially planar and because of its lightweight construction can be easily moved from place to place and stored with little difficulty. In order to properly use the platform, transverse stability is afforded when the support stand is rotated about the longitudinal axis of the neck **26** within the sleeve **28**. Rotation is accommodated by loosening the set screw **30** and manually twisting the support stand **20** into position. While the support stand **20** is illustrated at an essentially right angle orientation with respect to cross piece **18**, it should be appreciated that any reasonable orientation of the support stand **20** may be used as long as it gives the desired stability. On sloping or uneven terrain, the neck **26** may be extended from within the sleeve **28** to assure that at least three of the feet **22**, **24**, **38** and **40** solidly engage the ground.

The normal operational position of the work platform **10** is to place the arms **60** and **62** in outwardly projecting positions as shown at the right side of FIG. **2** or, alternatively, in the right angle positions as illustrated in FIG. **3**. To position the arms in the described orientation from the folded position illustrated in FIG. **1**, thumb screws **92** and **94** are loosened to permit extension of the arms as shown in FIG. **5** and, simultaneously, to permit rotation of the arms into either the illustrated right angle position (FIG. **3**) or the coextensive position (the right hand side of FIG. **2**). It is noted that the described structure permits rotation of the arms **60** and **62** through 360°, if desired. When the arm has been oriented according to the desired position, the shaft **66** is telescoped into the tube **48** and the thumb screw **94** tightened to hold the position of the arm **62**. The bracket **98** including upstanding sides **72** and **74** will prevent inadvertent rotation about the axis of shaft **66** even if the thumb screw **94** should fail to hold the arm **62** in position.

The work platform may be used in a variety of ways to support a workpiece. For example, as shown in FIG. **2**, a workpiece **100** may be placed upon the upper work surface of insert **51** and held tightly in place by first extending the arm **60** from within the tube **46**, then rotating the arm **60** so as to be superimposed over the workpiece **100** and thereafter lowering the arm **60** into tight engagement with the workpiece **100**. If desired, tightening of the thumb screw **92** will assist to hold the workpiece **100**, the arm **60** and the work surface provided by insert **51** forming a clamp to hold the workpiece **100**. As shown in FIG. **3**, the workpiece may be placed upon the arms **60** and **62** located at essentially a right angle to thereby present a generally flat work surface defined by the wood inserts **61**, **51** and **63**. It has also been found desirable to use the work platform **10** in tandem with another similar work platform in the same general way in which saw horses have heretofore been used.

In the course of continued use of the work platform **10**, it is likely that the wood inserts **51**, **61** and **63** will become damaged as tools are used on the workpieces **100** and **102**. As shown in FIG. **4**, however, the damaged inserts **51**, **61** and **63** can be easily replaced with corresponding inserts by simply removing the screws passing through slots **84–86**, removing the old damaged inserts and replacing with substitute, undamaged wood inserts.

The invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive and the scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. A foldable work platform comprising in combination:

a base comprising two upright, hollow legs rigidly interconnected by a cross piece and a support stand rotatably attached to the cross piece for selectively giving stability to the base when in upright position;

a scaffold adjustably cooperating with the base and comprising two downwardly depending hollow members rigidly interconnected by an open cross channel, each member being telescopically received by a leg, and means for securing each leg and hollow member together;

an arm configurated as an open U-shaped channel rotatably and extensibly carried upon the scaffold at at least one end thereof; and

wooden inserts nested within the cross channel and arms, the inserts extending above the sides of the channels.

2. A foldable work platform as defined in claim **1** wherein said support stand is vertically extensible to give stability to the base on uneven terrain.

3. A foldable work platform as defined in claim **1** wherein said wooden inserts are removably mounted upon the cross channel.

4. A foldable work platform as defined in claim **1** wherein said wooden inserts are removably mounted upon the arm.

5. A foldable work platform as defined in claim **1** wherein said means for securing each leg and hollow members together comprises means for positively interlocking the leg and hollow member.

6. A foldable work platform as defined in claim **1** wherein said scaffold comprises laterally extending support means for receiving the arms in nesting relationship in at least two orientations in which lateral displacement of the arm is limited.

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