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(54) **COMPONENTS FOR ASSEMBLING  
SCAFFOLDING SYSTEM**

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(76) Inventor: **Dan Robert Bulley**, Fort Nelson (CA)

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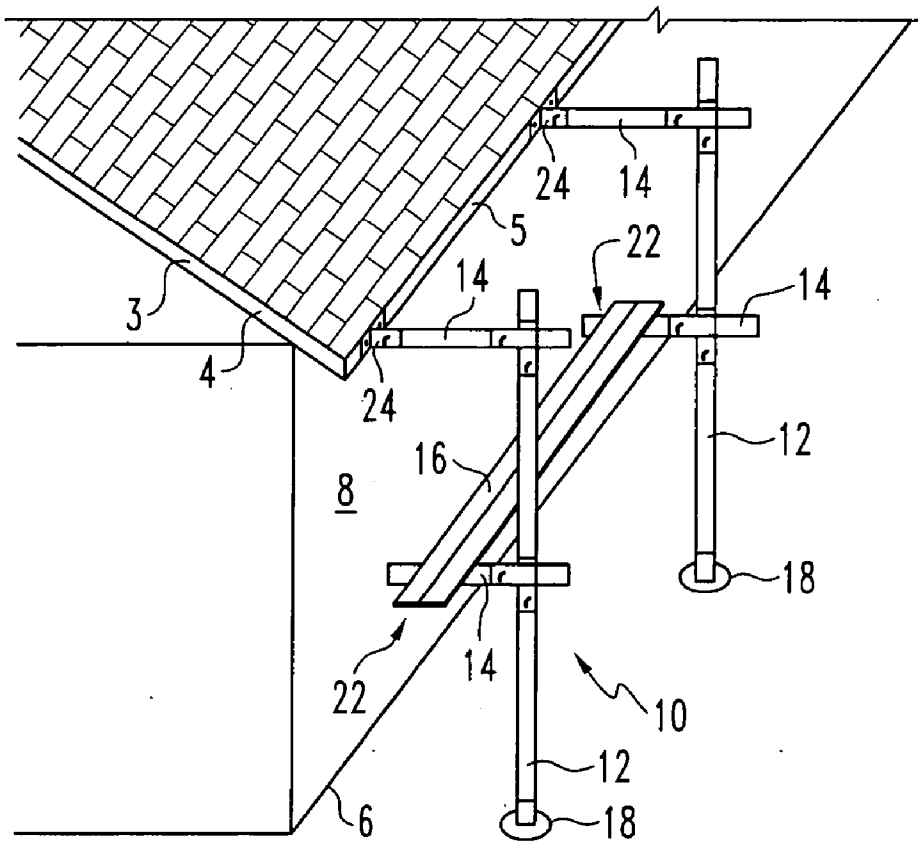
Correspondence Address:

**OYEN, WIGGS, GREEN & MUTALA**  
**480 - THE STATION**  
**601 WEST CORDOVA STREET**  
**VANCOUVER, BC V6B 1G1 (CA)**

(57) **ABSTRACT**

A kit for constructing scaffolding using standard lumber sizes and brackets which are pinned to the lumber pieces so the scaffolding can be rapidly broken down by removing the pins.

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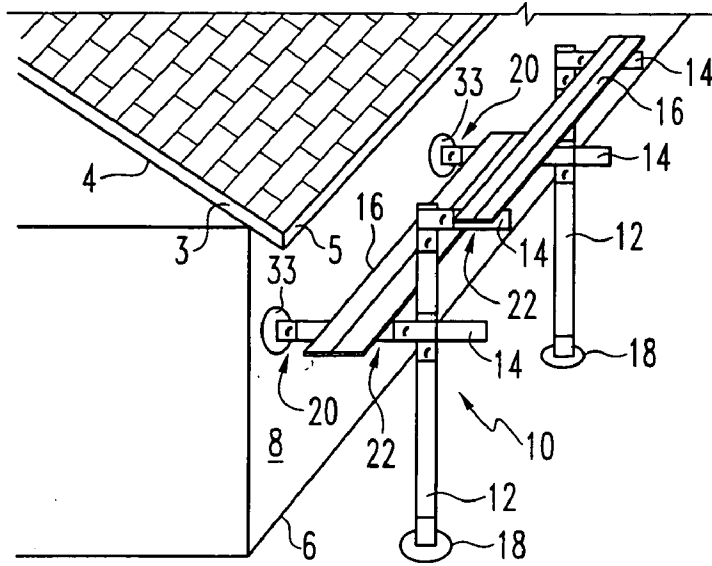


FIG. 1

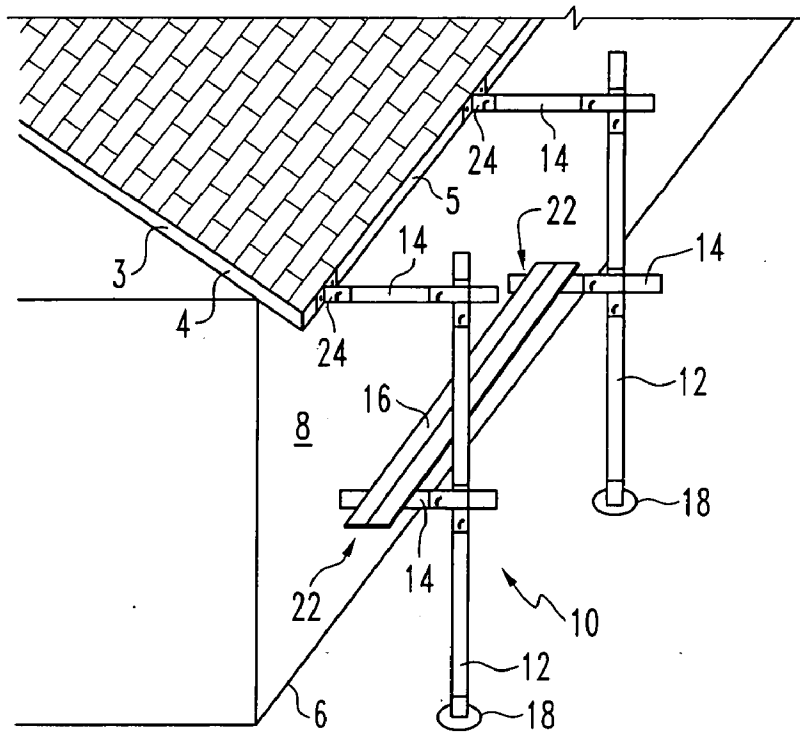


FIG. 2

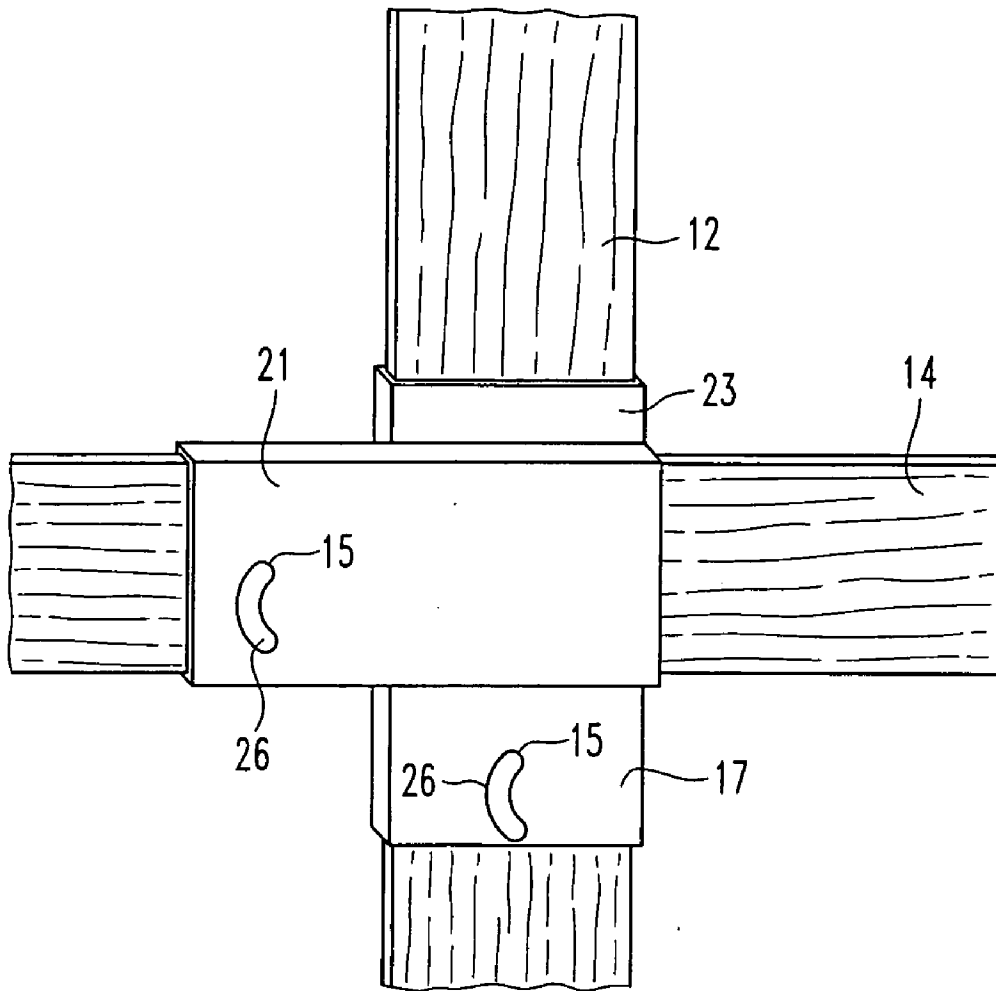


FIG. 3

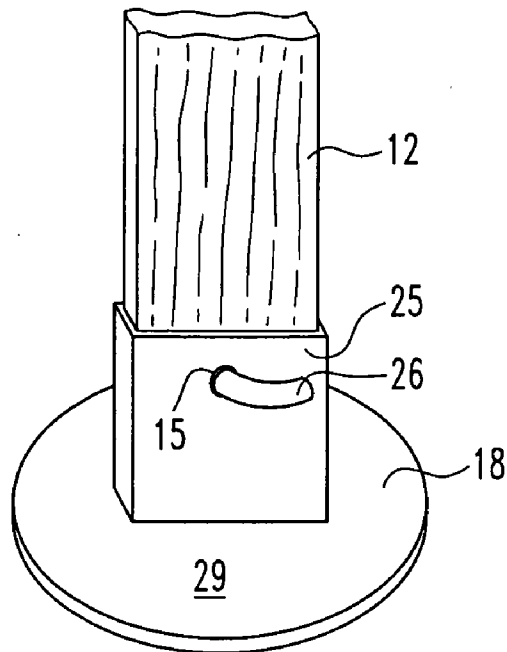


FIG. 4

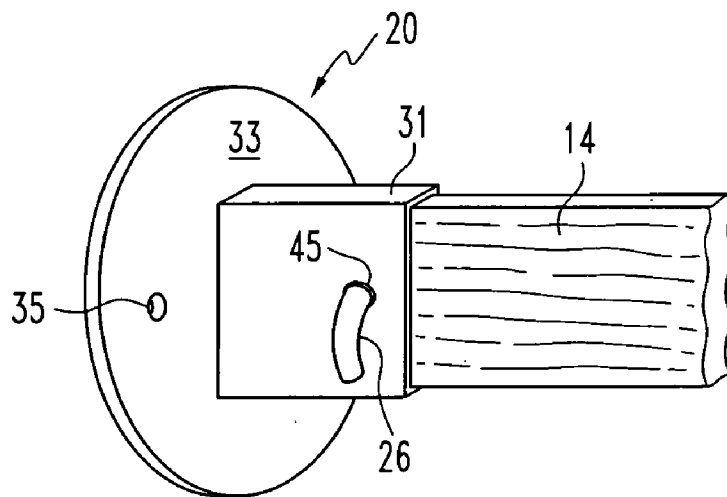


FIG. 5

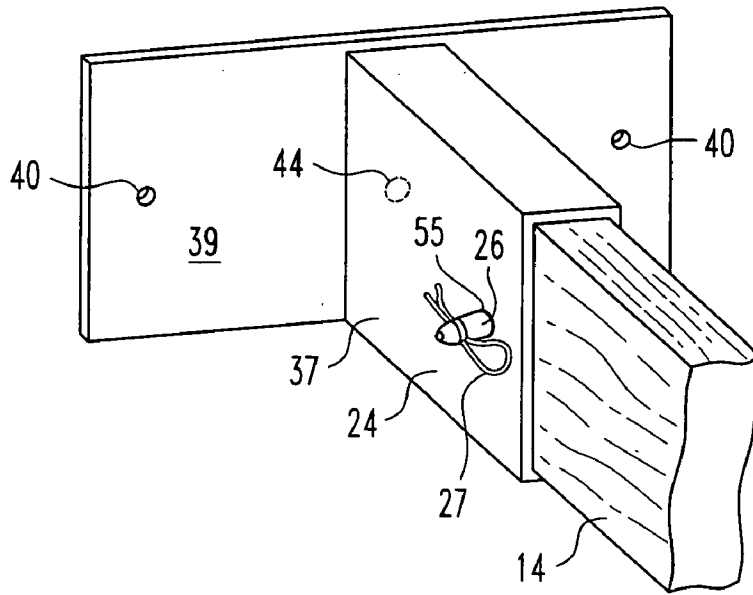


FIG. 6

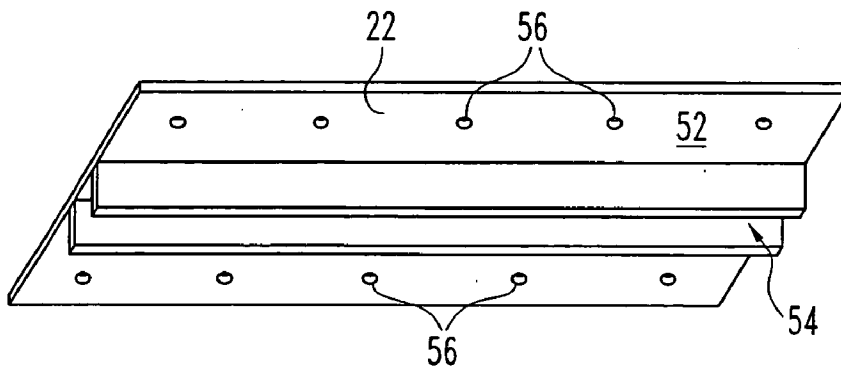


FIG. 7

## COMPONENTS FOR ASSEMBLING SCAFFOLDING SYSTEM

### TECHNICAL FIELD

[0001] The invention relates to scaffolding systems, and more particularly to scaffolding systems which can be constructed using standard lumber.

### BACKGROUND ART

[0002] Scaffolding has long been used to support workers who are working above the ground on the wall of a building, for example carpenters, painters, brick layers, sandblasters etc. It is of course important that scaffolding systems be secure, easily assembled, and break down into easily transportable sections. Typically scaffolding systems consist of a framework of metal pipes, but some scaffolding systems use metal brackets to secure standard lumber to form the vertical and/or horizontal members. This permits the scaffolding to be more economically constructed on a construction site utilizing lumber already available on the site. See for example Ingerman U.S. Pat. No. 2,321,916 issued Jun. 15, 1943, and Adams, Sr. U.S. Pat. No. 6,004,063 issued Dec. 21, 1999. Such systems have required that the brackets be fastened to the lumber using screws or bolts. This makes assembly and disassembly of the systems difficult and time-consuming, and may result in connections becoming loose.

[0003] There is therefore a need for a scaffolding system which can be constructed using standard lumber and which can easily be knocked down and re-assembled.

### DISCLOSURE OF INVENTION

[0004] The present invention therefore provides a kit for constructing scaffolding using standard lumber sizes, comprising: a) a plurality of right angle brackets, each comprising a first hollow sleeve for slidably receiving a first piece of lumber and a second hollow sleeve secured at right angles to the first hollow sleeve for slidably receiving a second piece of lumber, a pin associated with each of the first and second hollow sleeves, the first and second hollow sleeves being each provided with a hole for receiving the pin; b) a plurality of base elements each comprising a third hollow sleeve for slidably receiving an end of a piece of lumber, a ground-engaging element connected to the third hollow sleeve, and a pin, wherein the third hollow sleeve is provided with a hole for receiving the pin; and c) a plurality of bracing elements for bracing against a vertical surface, each comprising a fourth hollow sleeve for slidably receiving an end of a piece of lumber, a surface-engaging element connected to the fourth hollow sleeve, and a pin, wherein the fourth hollow sleeve is provided with a hole for receiving the pin.

[0005] The invention further provides a right angle bracket for use in erection of scaffolding, wherein the scaffolding is erected using a plurality of lumber pieces of pre-determined standard cross-sectional dimensions, the bracket comprising a first hollow sleeve sized to slidably receive a first of the pieces of lumber, a second hollow sleeve secured at right angles to the first hollow sleeve for slidably receiving a second of the pieces of lumber, and a pin associated with each of the first and second hollow sleeves, the first and second hollow sleeves being each provided with a hole for receiving the pins. The invention further provides a scaffold

structure comprising at least two such right angle brackets, at least two vertical support elements each comprising a standard sized piece of lumber slidably received in each of the first hollow sleeves of the right angle brackets, and at least two horizontal support elements each comprising a standard sized piece of lumber slidably received in each of the second hollow sleeves of the right angle brackets; wherein each of the vertical and horizontal support elements is provided with a hole for receiving one of the pins.

### BRIEF DESCRIPTION OF DRAWINGS

[0006] FIG. 1 is a perspective view of an assembled scaffolding system in a first configuration according to the invention;

[0007] FIG. 2 is a perspective view of an assembled scaffolding system in a second configuration according to the invention;

[0008] FIG. 3 is a detailed perspective view of a 90 degree angle bracket according to the invention;

[0009] FIG. 4 is a detailed perspective view of a base plate according to the invention;

[0010] FIG. 5 is a detailed perspective view of a wall plate according to the invention;

[0011] FIG. 6 is a detailed perspective view of a fascia plate according to the invention; and

[0012] FIG. 7 is a detailed perspective view of a platform support bracket according to the invention.

### BEST MODE(S) FOR CARRYING OUT THE INVENTION

[0013] With reference to FIG. 1 and 2, the present system forms a scaffolding framework 10, supported against wall 8 of house 6 having roof 4, gable 3 and fascia 5, using standard sizes of wooden lumber for uprights 12, horizontal members 14, and walkways 16. The standard sizes are preferably 2x6, 2x8, 2x10 or 2x12. The lumber pieces can be joined to form any size or configuration of scaffolding using five primary metal elements: 90 degree angle brackets 17, base plates 18, wall plates 20, fascia plates 24 and platform support brackets 22. In FIG. 1, wall plates 20 are used to brace the scaffolding 10 directly to wall 8 whereas in FIG. 2 fascia plates 21 are used to brace the scaffolding 10 to fascia 5.

[0014] With reference to FIG. 3, 90 degree angle bracket 17 is used to secure two pieces of wooden lumber 12, 14 at right angles. It consists of hollow horizontal sleeve 21 welded to hollow vertical sleeve 23. Sleeves 21, 23 are sized to snugly receive the lumber 12, 14 which are of standard lumber sizes. The lumber pieces 12, 14 are drilled to receive pins 26 which extend through holes 15 in sleeves 21,23 and are prevented from slipping out by cotter pins 27 (see FIG. 6) and which secure the lumber in place.

[0015] With reference to FIG. 4, base plate 18 is secured to the foot of vertical member 12. It consists of hollow vertical sleeve 25 welded to circular plate 29. Sleeve 25 is sized to snugly receive the lumber 12 which is of standard lumber size. Vertical member 12 can be of variable height to adapt to different ground conditions. The vertical member 12 is drilled to receive pin 26 which extends through hole 15 in

sleeve **25** and is prevented from slipping out by cotter pin **27**, thereby securing the lumber **12** in place.

[0016] With reference to FIG. 5, wall plate **20** is secured to the end of horizontal member **14**. It consists of hollow sleeve **31** welded to circular plate **33**, which can be attached by screws or the like through holes **35** directly to the wall **8**. Sleeve **31** is sized to snugly receive the lumber **14** which is of standard lumber size. The lumber piece **14** is drilled to receive pin **26** which extends through hole **45** in sleeve **31** and is prevented from slipping out by cotter pin **27**, thereby securing the lumber **14** in place to the plate **33**. The plate **33** may be pivotable on sleeve **31** to adapt to different angles, or fixed by welding or the like.

[0017] With reference to FIG. 6, fascia plate **24** is secured to the end of horizontal member **14**. It consists of hollow sleeve **37** secured to rectangular plate **39**, which can be attached by screws or the like through holes **40** directly to the fascia **5** or gable **3**. Sleeve **37** is sized to snugly receive the lumber **14** which is of standard lumber size. The lumber piece **14** is drilled to receive pin **26** which extends through hole **55** in sleeve **37** and is prevented from slipping out by cotter pin **27**, thereby securing the lumber **14** in place to the plate **39**. The plate **39** may be a separate piece from sleeve **37** secured thereto by a bolt or other fastener through holes **44** in plate **39** and the face of sleeve **37**, shown in dotted outline in FIG. 6, so that the angle of plate **39** on sleeve **37** can be adapted for different angles of gables etc. Alternatively, plate **39** can be fixed to sleeve **37** by welding or the like. Use of such bracing to fascia **5** or gable **3** allows unrestricted access to the wall for brickwork, stucco, siding etc.

[0018] Platform support bracket **22** is shown in FIG. 7. It has a plate **52** and a channel **54** which sits on horizontal member **14**, and holes **56** to receive screws to extend into the underside of walkway members **16** so that members **16** are stable and secure on horizontal members **14**.

[0019] Preferably the bracket elements are constructed from  $\frac{3}{8}$ -inch thick aluminum plate, and the pins are  $\frac{1}{2}$ -inch diameter aluminum pins.

[0020] Thus, using a combination of the bracket elements described above and standard lumber, the contractor can quickly construct sturdy, safe scaffolding by drilling the lumber in the appropriate locations and pinning the brackets in place. When the job is completed, the pins are simply removed and the brackets transported to the next site.

[0021] As will be apparent to those skilled in the art in the light of the foregoing disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof. Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the following claims.

What is claimed is:

1. A kit for constructing scaffolding using pieces of lumber of standard sizes, comprising:

- a) a plurality of right angle brackets, each comprising a first hollow sleeve for slidably receiving a first piece of lumber and a second hollow sleeve secured at right angles to said first hollow sleeve for slidably receiving a second piece of lumber, a pin associated with each of

said first and second hollow sleeves, said first and second hollow sleeves being each provided with a hole for receiving said pin;

- b) a plurality of base elements each comprising a third hollow sleeve for slidably receiving an end of a piece of lumber, a ground-engaging element connected to said third hollow sleeve, and a pin, wherein said third hollow sleeve is provided with a hole for receiving said pin; and

- c) a plurality of bracing elements for bracing against a vertical surface, each comprising a fourth hollow sleeve for slidably receiving an end of a piece of lumber, a surface-engaging element connected to said fourth hollow sleeve, and a pin, wherein said fourth hollow sleeve is provided with a hole for receiving said pin.

2. The kit for constructing scaffolding of claim 1 further comprising a plurality of pieces of lumber of standard lumber sizes, adapted to be secured in said hollow sleeves by providing holes in said lumber for receiving each of said pins.

3. The kit for constructing scaffolding of claim 3 further comprising cotter pin means for securing each of said pins in said holes.

4. The kit for constructing scaffolding of claim 1 wherein said plurality of bracing elements are adapted to bear against a vertical wall.

5. The kit for constructing scaffolding of claim 1 wherein said plurality of bracing elements are adapted to bear against a fascia plate.

6. The kit for constructing scaffolding of claim 3 further comprising support bracket means comprising a channel sized to seat on an edge of a piece of lumber, and means for securing said channel to an underside of a piece of lumber.

7. A right angle bracket for use in erection of scaffolding, wherein said scaffolding is erected using a plurality of lumber pieces of pre-determined standard cross-sectional dimensions, said bracket comprising a first hollow sleeve sized to slidably receive a first of said pieces of lumber, a second hollow sleeve secured at right angles to said first hollow sleeve for slidably receiving a second of said pieces of lumber, and a pin associated with each of said first and second hollow sleeves, said first and second hollow sleeves being each provided with a hole for receiving said pins.

8. The right angle bracket according to claim 7 wherein said first and second sleeves are made of metal.

9. The right angle bracket according to claim 8 wherein said first and second sleeves are secured by welds.

10. The right angle bracket according to claim 7 wherein said first and second sleeves are rectangular in cross-section.

11. A scaffold structure comprising:

- a) at least two right angle brackets as claimed in claim 7;

- b) at least two vertical support elements each comprising a standard sized piece of lumber slidably received in each of said first hollow sleeves of said right angle brackets;

- c) at least two horizontal support elements each comprising a standard sized piece of lumber slidably received in each of said second hollow sleeves of said right angle brackets;

wherein each of said vertical and horizontal support elements is provided with a hole for receiving one of said pins.

**12.** The scaffold structure of claim 11 further comprising a base element comprising a third hollow sleeve for slidably receiving an end of a piece of lumber, a ground-engaging element connected to said third hollow sleeve, and a pin, wherein said third hollow sleeve is provided with a hole for receiving said pin

**13.** The scaffold structure of claim 11 further comprising a bracing element for bracing against a vertical surface secured to an end of one of said horizontal support elements, said bracing element comprising a fourth hollow sleeve for slidably receiving said end of a piece of lumber, a surface-engaging element connected to said fourth hollow sleeve,

and a pin, wherein said fourth hollow sleeve is provided with a hole for receiving said pin.

**14.** The scaffold structure of claim 11 further comprising at least two support bracket means each comprising a channel seated on an edge of one of said horizontal support elements, and a piece of lumber secured to said channel by said securing means to an underside of a piece of lumber.

**15.** The scaffold structure of claim 11 wherein each of said pins is secured in said holes by cotter pin means.

**16.** The scaffold structure of claim 13 wherein said bracing element is adapted to bear against a vertical wall.

**17.** The scaffold structure of claim 13 wherein said bracing element is adapted to bear against a fascia plate.

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