United States Patent [19]

Kensrue

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[54] **SCAFFOLD PLANKING CLAMP**

[76] Inventor: **Milo M. Kensrue,** 2265 S. Grand, Santa Ana, Calif. 92705

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[52] **U.S. Cl.** **182/222,** 182/179, 403/400

[51] **Int. Cl.** **E04g 5/08**

[58] **Field of Search** ..... 182/222, 223, 179, 178, 182/119; 248/229, 226, 74 R, 72, 228; 403/400, 386, 384, 398

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Primary Examiner—Reinaldo P. Machado

Attorney, Agent, or Firm—Whann & McManigal

[57] **ABSTRACT**

A device for anchoring the planking of a scaffold structure so that it will not creep or shift during use to a position which would create a dangerous hazard, clamping means being provided on the underside of the planking for engaging planking supporting members of the scaffold structure, and screw-actuated hook members arranged to extend over the marginal edges of the planking.

4 Claims, 7 Drawing Figures

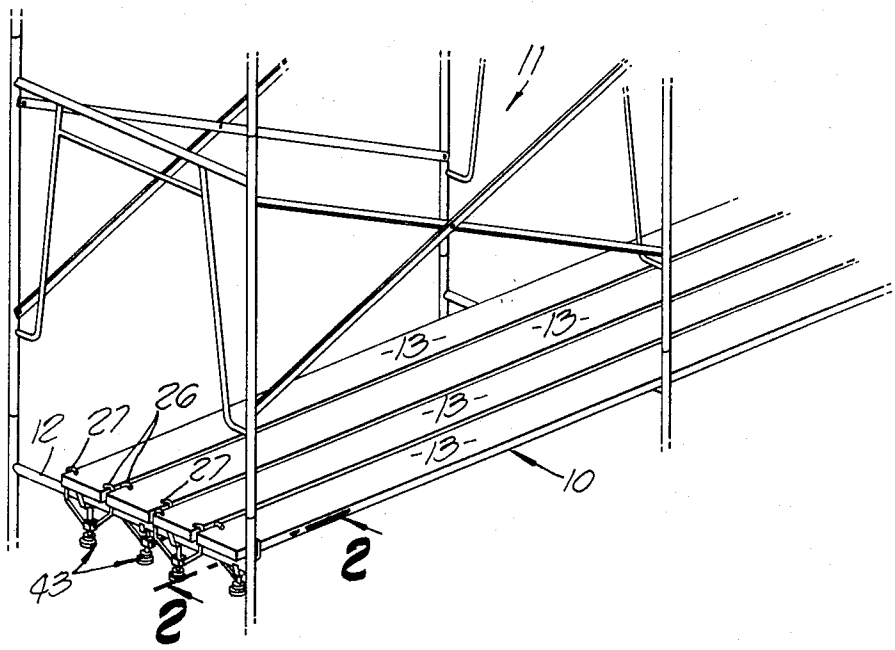
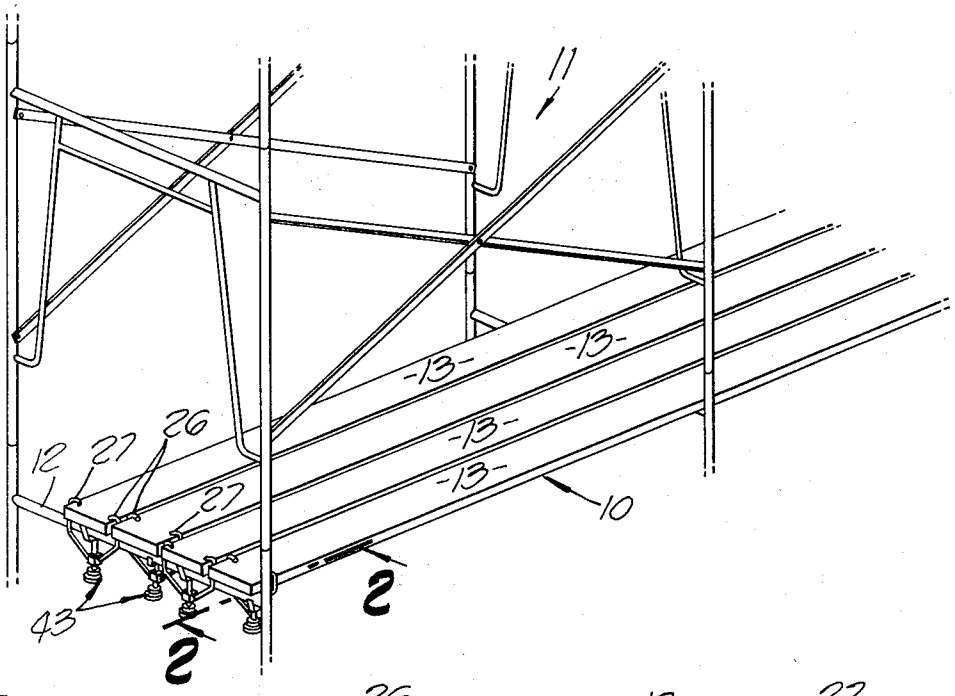


FIG. 1.



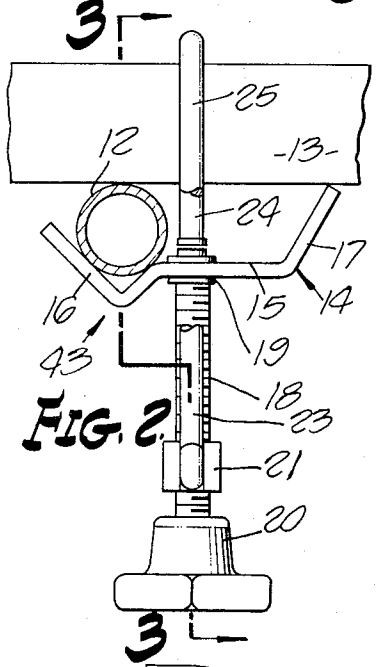


FIG. 2.

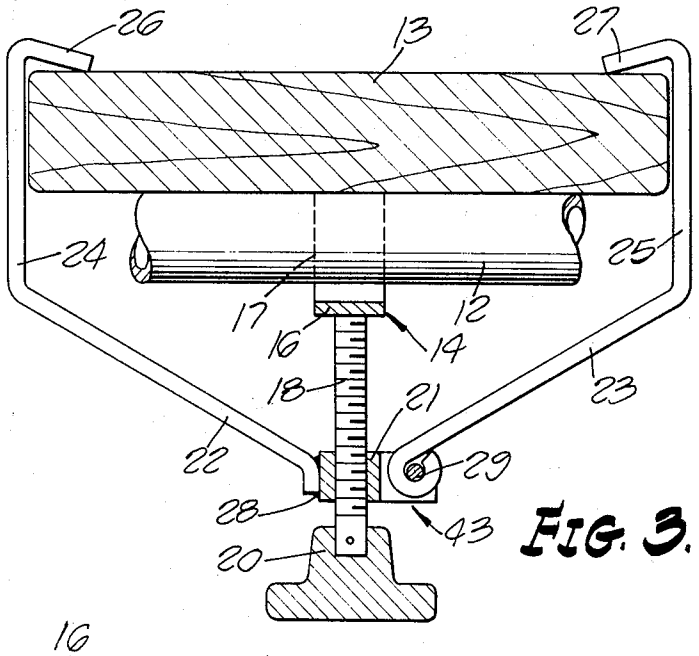


FIG. 3.

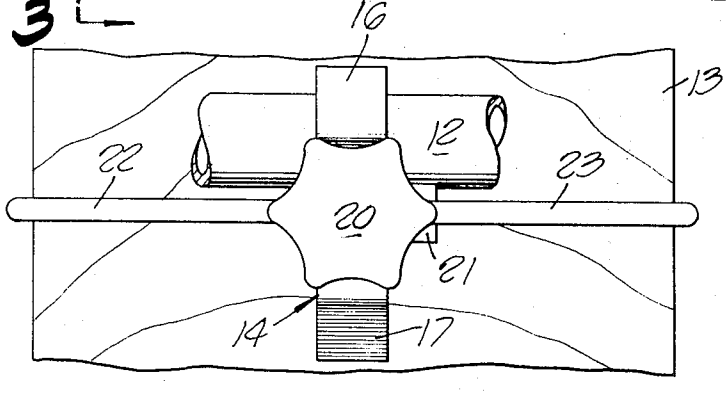


FIG. 4.

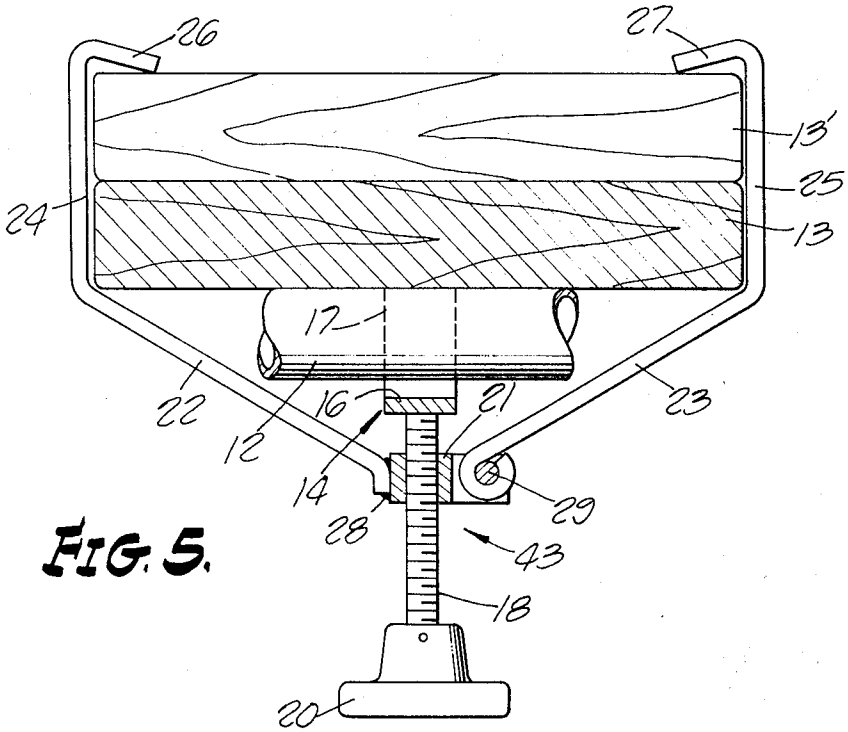
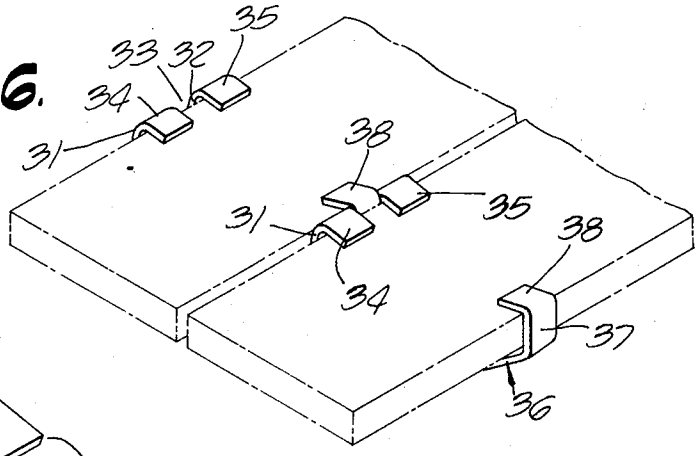


FIG. 5.

FIG. 6.



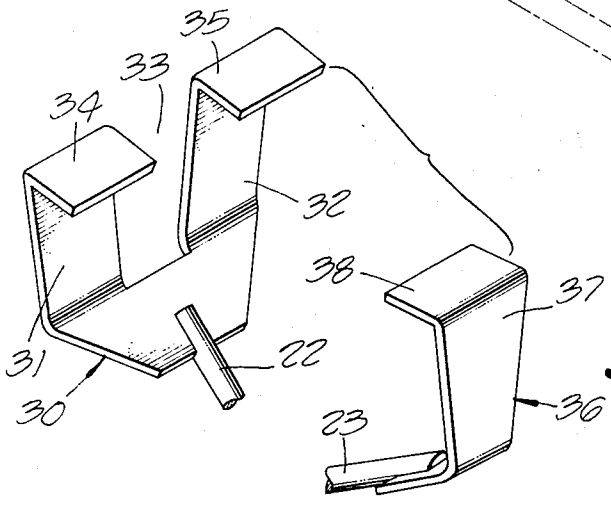


FIG. 7.

SCAFFOLD PLANKING CLAMP

BACKGROUND OF THE INVENTION

The present invention relates generally to the field of supporting structures such as exemplified by scaffolding.

Heretofore, it has been the practice in many scaffold installations to simply place planking on the scaffold cross-members at the required working level. During use, movement of the workmen in walking on the planking can cause it to creep and shift to such an extent as to create a dangerous hazard to safety. In some cases, efforts have been made to solve the problem by toe-nailing the adjacent planks, but such means is not entirely successful and at most constitutes only a makeshift solution.

There is therefore an urgent need for an effective clamping or other means which can be easily and effectively applied for securely anchoring the planking to the cross-members of the scaffold and yet which may be quickly and easily detached for use again in changing the planking from one working level to another.

The present invention solves the problem by providing separate clamping devices for the ends of each plank, in which a clamping bar on the under side of the plank is arranged to engage the scaffold cross-member and under surface of the planking; screw and nut means being manually operable to actuate plank edge-engaging hook members carried by the nut so as to force them to clampingly coact with the clamping bar and securely anchor the plank to the cross-member.

SUMMARY OF THE INVENTION

The present invention is concerned primarily with scaffold structures, and is more particularly concerned with unique means for anchoring or securing scaffold planking against creeping or shifting during use.

It is one object of the herein described invention to provide unique means of simple, inexpensive construction for effectively and efficiently anchoring scaffold planking against creeping or shifting.

A further object is to provide a novel clamping device for securing the ends of scaffold planking to a supporting cross-member of the scaffold structure.

Another object is to provide a novel clamping device for scaffold planking in which a screw and nut actuator is manually operable to forceably engage a clamping bar with a scaffold planking support member on the under side of the planking, and hook members with the planking upper surface edge margins, whereby to hold the planking against creeping and shifting.

Further objects and advantages of the invention will be brought out in the following part of the specification, wherein detailed description is for the purpose of fully disclosing a preferred embodiment of the invention without placing limitations thereon.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring to the accompanying drawings, which are for illustrative purposes only:

FIG. 1 is a fragmentary perspective view of a scaffold structure in which the planking is secured by clamping devices embodying the features of the present invention;

FIG. 2 is an enlarged fragmentary sectional view, taken substantially on line 2—2 of FIG. 1 and showing details of the clamping device;

FIG. 3 is a fragmentary sectional view taken substantially on line 3—3 of FIG. 2;

FIG. 4 is a fragmentary bottom plan view of the same;

FIG. 5 is a view similar to FIG. 3, but showing the clamping device as used for overlapping scaffold planks;

FIG. 6 is a fragmentary view illustrating the manner of using a modified structure for the hook members; and

FIG. 7 is a fragmentary perspective view showing details of the modified hook members.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring more specifically to the drawings, for illustrative purposes, the invention is shown as being applied to the planking **10** of a scaffold structure **11** constructed of piping and including cross-members **12** which form supports for the planking at each working level. The planking usually comprises individual planks **13** which are laid in edge-to-edge formation on the supporting cross-members to provide a walkway for workmen at a working level on the scaffold.

In order to anchor the planking and prevent its shifting or creeping during use, which could cause a dangerous hazard, clamping devices **43** according to the present invention are provided for securing the individual planks to the cross-member **12.** These clamping devices are positioned on the under side of the planking so as not to interfere with the activities of the workmen during their movements along the upper surface of the planking.

As best shown in FIGS. **2** and **3,** each of the clamping devices **43** comprises a clamping bar **14** constructed of a suitable strap iron to provide a straight intermediate portion **15** which connects at one end with a V-shaped portion **16** and at its other end with an angularly deflected portion **17.** The clamping bar as thus conformed has its opposite end portions so proportioned that the V-portion **16** will form a seat for the cross-member **12** when the straight portion is in substantially parallel relation to the under surface of the planking **13** which is laid on the cross-member **12.** In this position of the clamping bar, the deflected end portion **17** should engage the under surface of the associated planking.

An elongate screw member **18** is rotatably supported at one end in a suitable bearing **19** in the straight portion **15** of the clamping bar so that the screw member **18** depends therefrom with its elongate axis substantially in right-angled relation to the portion **15.** The opposite end of the screw member is fitted with a knob **20** by means of which the screw member may be manually rotated.

The screw member carries a nut **21** having threaded engagement with the screw, and which will be axially moved along the screw towards and away from the clamping bar **14** during rotation of the screw.

The nut **21** is connected on opposite sides of the screw with a pair of hook members **22** and **23** which are respectively formed with outer end portions **24** and **25** adapted to extend in substantially parallel relation along the opposite edges of the associated scaffold

plank. The portions **24** and **25** are respectively deflected towards each other to provide hook-like end portions **26** and **27** which extend over and engage the marginal upper edge surface portions of the plank.

As shown in FIG. **3**, the hook member **22** at its inner end is shown as being fixedly secured to the nut **21** by welding or other suitable means as indicated by the numeral **28.** The other hook member **23** is shown as having its inner end swingably connected to the nut **21** by means of a pivot **29.** By providing a swingable mounting for one of the hook members, the attachment of the hooks at the opposite sides of a plank if facilitated. It is to be understood, however, that it is within the concept of the present invention to swingably mount both of the hook members for swinging movement on the nut.

As shown in FIG. **1**, in order to obviate interference of the hook members of adjacent planking, the clamping devices may be alternately reversed so that the hook members of adjacently disposed devices will extend on opposite sides of the cross-member **12.** With the construction described above, the screw **18** and nut **21** constitute an actuator which may be manually operable to coactively activate the clamping bar **14** and the hook members **22** and **23** into clamped and unclamped positions with respect to the associated plank **13.** In the clamped position, the actuator causes the end portions **26** and **27** to forceably engage the outer surface edge-margins of the associated plank and forceably press the plank against the adjacent supporting cross-member **12** so as to anchor the plank against creeping or shifting movements.

The clamping device as described above is not limited to the clamping of a single planking member, as shown in FIG. **1** and FIG. **3,** but can also be used for clamping two planks in superposed relation, as shown in FIG. **5.** Such a condition may result, for example, where the adjacent ends of the planking are in overlapped relation, as shown in FIG. **5,** wherein a top plank **13'** has an end overlapping an underneath plank **13.**

A modified structure for the hook members **22** and **23** is shown in FIGS. **6** and **7,** which eliminates the necessity for mounting the adjacent clamping devices in staggered relation, as shown in FIG. **1.**

In the modified structure, one of the hook members, in this case the hook member **22,** has its outer end portion formed as an extension, as generally indicated at **30,** from a plate material to provide a pair of fingers **31** and **32** which are separated by a space **33.** The fingers **31** and **32** are coplanar so as to extend along the associated plank edge, and respectively have inwardly turned ends **34** and **35** for engaging over the marginal upper edge surface portion of the plank in a manner similar to the previously described end portion **26.**

The hook member **23** is provided similarly with an extension **36,** except that in this case a single finger **37** is formed for extending along the opposite edge of the plank, this finger having an inwardly turned end **38** for engaging over the opposite marginal upper edge surface portion of the plank.

As a feature of the modified structure, as described above, the configuration of the finger **37** is conformed to the shape of the space **33,** so that when a pair of clamping devices are mounted on adjacent planks of the planking, the finger **37** of one device will be positioned in the space **33** of the other device, thus permitting the fingers to assume a coplanar arrangement between the adjacent edges of the associated planks, as illustrated in FIG. **6.**

From the foregoing description and drawings, it will be clearly evident that the delineated objects and features of the invention will be accomplished.

Various modifications may suggest themselves to those skilled in the art without departing from the spirit of my invention, and, hence, I do not wish to be restricted to the specific forms shown or uses mentioned, except to the extent indicated in the appended claims.

I claim:

1. A device for anchoring a scaffold planking to a scaffold supporting structure, comprising:

a. means positioned on the underside of the planking for grippingly engaging a cross-member of the structure, said means comprising a clamping bar engageable with the cross-member and an under surface of the planking;

b. force applying means connected with said first means having a portion adapted to extend over and engage the upper surface of the planking, said force applying means comprising a pair of elongate hook members connected with a nut, one of the hook members having a fixed connection with the nut and the other a hinged connection, each hook member having a deflected outer end portion adapted to overlie the upper surface of the planking; and

c. actuating means operable to move said force applying means so that said portion is clampingly forced against the upper surface of the planking, said actuating means comprising a manually operable screw member rotatably carried by said clamping bar and having threaded engagement with said nut.

2. A device according to claim **1,** wherein the hook members are in confronting opposed relation and adapted to engage the opposite edge margins of a single plank of the planking.

3. A device for anchoring scaffold planking to a scaffold supporting structure, comprising:

a. means positioned on the underside of the planking for grippingly engaging a cross-member of the structure, said means comprising a clamping bar engageable with the cross-member and an under surface of the planking;

b. force applying means connected with said first means having a portion adapted to extend over and engage the upper surface of the planking, said force applying means comprising a pair of hook members connected with a nut, each of said hook members having an end extension portion formed of plate material, one of said extensions comprising a pair of spaced apart fingers having coplanar relation and the other extension comprising a single finger; and

c. actuating means operable to move said force applying means so that said portion is clampingly forced against the upper surface of the planking, said actuating means comprising a manually operable screw member rotatably carried by said clamping bar and having threaded engagement with said nut.

4. A device according to claim **3,** wherein the configuration of the single finger is such as to enable it to fit in the space between the pair of fingers of an adjacently associated device and in coplanar relation with said pair of fingers thereof.

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